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Address.

THE LEGISLATIVE CONTROL OF MEDICAL PRACTICE.1

BY REGINALD H. PITZ. M.D., BOSTON.

(Continued from Vol. cxxx, No. 26, p. 641.)

EMINENT and able counsel have been repeatedly employed to represent the opposition. The means by which counsel may be procured, and attendance at the hearings ensured, is suggested in the circular of which a copy is herewith given. It is headed by the names of "Prof. J. Rodes Buchanan, M.D., Pres., San Francisco, Cal., and J. Winfield Scott, Sec'y, Boston, Mass., Publishers and Gratuitous Distributors of Literature devoted to Public Health, Constitutional Liberty and Reform Practice."

The document contains in a seal or device the words, "National Constitutional Liberty League, Boston, Mass., Incorporated October 30, 1888." It reads as

Boston, Mass., DEAR FRIEND OF FREEDOM AND JUSTICE: critical emergency is upon us. Liberty and life are trembling in the balance. The urgency of the legislative situation impels to a third and final appeal. A hearing on one of the three threatened bills has actually been appointed and adjourned because we were unprepared - had not sufficient funds to secure a competent attorney. The bill prohibits, absolutely, the practice of all save M.D.'s. Only by the strictest economy, pinching here and skimping there, can we conduct triumphant State campaigns upon a paltry \$5,000 or \$6,000. A successful political campaign, covering identical territory, and effecting similar results, costs five or six times as much. Think of it! The hearing set for the 21st, and less than one-half the necessary amount guaranteed! Unless the recipients of this call, respond promptly and generously the would-be remonstrants must suffer the second hearing to go by default also, and the medical monopolists allowed to win an easy victory. few who have heretofore subscribed thousands annually, feeling they have already contributed more than their share, are this year giving only hundreds. This deficiency can easily be made good by numerous small contributions of \$60 and \$120 payable in monthly instalments of \$5 or \$10. True, times are hard, but they will be harder still for progressive practitioners if either of the three bills pass, as they surely will unless a common fund and common fight prevents. Will you contribute a small percentage of your monthly income towards the defence of your own rights and those of your patients, or supinely surrender your entire practice to your rivals? They are politically prepared and financially equipped for a struggle worthy of a better cause. If those who have NOT responded to our former appeal will now do so as promptly and generously as those who HAVE, we will realize a sufficient sum to conduct a successful campaign. Pardon us if we repeat:

Precious time is swiftly passing. Prompt action is urgent—indispensible—imperative. Delay is dangerous. Don't eat or sleep until you have sent in your pledge and started the twin petitions. We urge you with all the earnestness and emphasis possible, to promptly return one of the en-closed Free-Will Offering forms signed for the largest sum you can possibly pay monthly during 1894. Unless immediate responses encourage the undertaking you will not be called upon for any part of the pledge. Won't you contribute cash or pledge monthly payments for a full year AT ONCE? We urge — we beg you to come forthwith to the rescue with Pledges and PETITIONS. Let us not surrender without a struggle. As so very much depends upon YOUR response we earnestly hope you will do your very

¹ The Annual Discourse before the Massachusetts Medical Society delivered June 13, 1894.

best and persuade others to do likewise. Remember that in ten years our National League has conducted over twenty campaigns in various States and never been beaten. And we will win this year too, if ample munitions are sup-Yours for liberty and justice, plied.

J. WINFIELD SCOTT, Sec'y.

On the back of this document is printed:

RALLY TO THE RESCUE.

Attend the hearing Wednesday and cast your voice and influence for liberty and justice. Let every one opposed to medical monopoly prove it by their presence. Bring your friends with you. COME EARLY.

Accompanying this remarkable document were the two forms mentioned, one in black, the other in blue A copy of the latter is here given:

\$60.00. No.

1894.

FREE WILL OFFERING.

In consideration of the praiseworthy past educational services and reformatory efforts of the NATIONAL CONSTI-TUTIONAL LIBERTY LEAGUE, and in encouragement of its proposed vigorous campaign against medical legislation in Massachusetts this year, we herewith remit \$, and hereby and cheerfully agree to pay each month during 1894 to J. WINFIELD SCOTT, Sec'y, at Room 30, 383 Washington St., Boston, Mass., the sum of Five Dollars.

Name, Complete address,

The statement of previous efforts is substantiated by the following extract from the closing argument of Charles E. Gross, Esq., before the Judiciary Committee of the Connecticut Legislature in 1893:72

Before the first hearing, Mr. Chairman, a circular was sent broadcast through this State in certain lines of medical practice. . . . Let me continue the circular:

NATIONAL CONSTITUTIONAL LIBERTY LEAGUE, INCORPORATED, OCT. 30, 1888. BOSTON, MASS. PUBLISHERS AND DISTRIBUTORS OF MEDICAL LIBERTY LITERATURE.

BOSTON, MASS., 1893.

Dear Friend of Freedom: — I am reliably informed that a monstrous medical law is likely to be enacted by your Legis-

lature.
"Forewarned is Forearmed." lature. "Forewarned is Forearmed." We beseech you to bestir yourself instantly and incessantly in behalf of constitutional liberty, until this medical monopoly measure is overwhelmingly defeated by a righteously indignant populace. If you would profit by our years of successful experience, and desire our cooperation, begin the circulation of the accompanying remonstrance forthwith. When you have secured from one to five hundred influential signatures, with addresses and occupation, copy the addresses complete and send to us. Then mail the remonstrance to your Representative or Senator.

Equipped with our league literature, the majority of them

Equipped with our league literature, the majority of them could, and would (with secret exultation), defeat the proposed medical bill with neatness and dispatch. Therefore it is of the utmost importance that your Senator and Representative be thus immediately supplied with the medical liberty literature described by the selected sixular.

described by the enclosed circular.

Kindly keep us constantly advised of what you are doing and the progress of the bill.

Yours for constitutional liberty,
J. WINFIELD SCOTT, Sec'y.

AN INVITATION.

- Since dictating this letter we have suggested, and influential citizens secured, the postponement of the hearing until Wednesday, March 8th, in the Superior Court room.

It is of the utmost importance that citizens who have been cured by other than "regular" M.D.'s attend the hearing and

testify regarding their treatment.

It is equally important that those who would maintain their constitutional liberty of choice of physician or healer personally appear to signify their determination to defend this inher-

ent and inalienable right.

We earnestly hope that you will attend, and persuade as many others as possible to go, thus by your presence casting

⁷² Proceedings of the Connecticut Medical Society, 1898, 286.



your personal, moral influence in behalf of freedom and justice. Write us at once at Hartford, Conn., if you can come, and tell us how large a delegation you can probably muster. As you value your medical liberty, we beseech you not to neglect the important duties outlined herein. Remember that health and our personal, moral influence in behalf of freedom and justice. happiness, and human life, depend upon the defeat of this medically monopolistic measure. Dare to do your duty. J. W. S.

A THUNDERBOLT OF CAPTIVATING ELOQUENCE AND SUB-LIME ORATORY. (In Press.)

Mr. Joseph L. Barbour's unanswerable argument, March 8, 1893, against medical legislation, before the Legislative Judiciary Committee of Connecticut, was a matchless masterpiece. It Committee of Connecticut, was a matchless masterpiece. It rightfully elicited round after round of irrepressible applause. The widespread distribution of this powerful, persuasive plea for the people will kill the bill and endear their champion to the hearts of every medical liberty-loving citizen.

Every legislator, and every citizen whose influence is desirable at the State House, should be supplied. Regular retail

price, 25 cents.

Procure and distribute all you can, and persuade every one else to do likewise.

Then follows another:

Doctor: - One more word of warning!

If you were as familiar as I am, after years of court and legislative experience in nearly every State, with the cunningly devised tricks and traps of allopaths to ensuare and subjugate homesopaths and eclectics, I believe you would look before you leap into the ingenious and inquitous snare set by the Connecticut medical bill.

Are you ready for this?

If not, and you can't come to the hearing March 21st to protest, write us at once (at 152 Allyn Street, Hartford, Conn.) a letter denouncing the medical bill, and I will have it read before

Also write your members of the Legislature forthwith that you hore they will oppose the bill by voice and vote.

Sincerely yours for constitutional liberty,

J. Winfield Scott, Secretary.

Next came this:

AN OPEN LETTER.

Dear Devotee of Constitutional Liberty: - The quarrel of the M.D.'s before the Judiciary Committee at Hartford, Wednesday, March 8th, wastefully consumed all the time, save that so admirably improved by the splendid speech of Joseph L. Barbour in behalf of medical liberty. The people themselves are to be heard by the same committee, Tuesday afternoon, March

We are told your presence and influence will aid the cause of

medical liberty Come.

In the meantime it is of the utmost importance that remonstrances be immediately circulated and extensively signed by influential citizens, and promptly placed in the hands of local representatives and Senators, together with our \$1.00 package of medical liberty. Iterature

we earnestly hope that you will attend and persuade as many others as possible to go, thus by your presence casting your personal moral influence in behalf of freedom and justice. As you value your medical liberty, we beseech you not to neglect the important duties outlined herein. Remember that health and happiness and human life depend upon the defeat of this medically monopolistic measure. Dare to do your duty. J. Winfield Scott, Secretary.

P. S. After the hearing a decidedly necessary and important P. S. After the hearing a decidenty necessary and important conference to consider WHAT TO DO NEXT has been called to meet at 152 Allyn Street, at 7.30 sharp. Every so-called "irregular" practitioner should arrange to attend and help devise further plans for the defeat of the bill and for future protection should it pass.

J. W. S.

Now coming down a little later:

PUBLISHERS AND DISTRIBUTORS OF MEDICAL LIBERTY LITERATURE.

BOSTON, MASS., 1893.

Dear Co-worker: — At the hearing at Hartford, March 21st, the quacks who are clamoring for "protection" accused the so-called irregulars of malpractice, and the hearing was adjourned to afford them an opportunity to prove it.

It is evident this battle must be carried through the Senate and House. The doctors are, and have been, lobbying the Legislature for some time.

and House. The doctors are, and have been, lobbying the Legislature for some time.

Tuesday evening's conference, to consider what to do next, adjourned to meet Monday evening, March 27th, at 7.45 o'clock, with Mr. Patterson, Room 22, "the Goodwin."

Every progressive practitioner is vitally concerned, and should attend without fail.

Address until further notice,

I WINDELINE SCORE Socretory.

Address until further notice,
J. Winfield Scott, Secretary,
152 Allyn Street, Hartford, Conn.

The last circular is as follows:

NATIONAL CONSTITUTIONAL LIBERTY LEAGUE, INCORPORATED OCT. 30, 1888. BOSTON, MASS PROFESSOR J. RHODES BUCHANAN, M.D., President. J. WINFIELD SCOTT, 383 WASHINGTON ST., BOSTON, MASS., Secretary.

Boston, Mass., 18"3.

Dear Devotes of Constitutional Liberty: The next page explains the origin and utility of "Allopathic Czar Parties."

They are potent and popular educational entertainments — admirable first steps towards a Local Liberty League — leading to a Chatauqua-like course of studious reading. We appeal to you to send stamps for one or more copies of "Allopathic Czars" and invite a score of neighbors in to enjoy the fun. At the close, when every one is in a rollicking good humor and full of enthusiasm, appoint another meeting and take a five or ten cent collection for our entire League Library: price only \$1.00 less than cost.

Hoping to hear favorably and frequently from you, we remain yours for health, humanity and constitutional liberty.

Earnestly yours,

J. WINFIELD SCOTT, Secretary.

The following statement 78 concerning the source of opposition to medical legislation in Georgia may be interesting. It seems that in November, 1892, the preliminary steps were taken leading to the preparation of a bill which was submitted to the legislature then in session. It passed the Senate by a vote of thirty-five to nine. The opposition was aided by a lawyer hired to oppose this bill by a noted itinerant practitioner of Boston. It is, furthermore, an open secret that the services at the State House of an eminent lawyer conspicuously opposed to one of the proposed bills were paid for by a person whose name is to be found in the Boston Directory among the physicians of Boston, not designated as belonging to any of the incorporated medical societies.

With your permission, attention will now be directed to what may be regarded as the essentials of a law regulating the practice of medicine, and to what extent they are present in the Massachusetts law now before the legislature. It should not be forgotten that it is largely owing to the efforts of a Fellow of the Massachusetts Medical Society, Dr. Edwin B. Harvey, of Westboro', that the progress of this bill has been pro-

That the State may properly control the practice of medicine in the interest of the public, it is desirable that the laws should be so constructed that their provisions may be carried out in the simplest and most direct way possible. The title of the act is not an important feature if the purpose is clear, and whether physicians are licensed, registered or regulated, is less essential than that they should be duly qualified by intelligence, education and morals. The necessary degree of intelligence and education must vary with the intellectual development of the people at the time; and it is useless to make the standard so high as to be beyond the reach of a considerable minority, or so low that the majority consider it worthless. Neither should the law become a dead letter, and no legislation at all is better than laws forgotten or not enforced.

The State must assign the duty of regulating medical practice to trustworthy citizens, properly qualified. These are necessarily physicians, although they in turn may be supervised by a smaller board, as that of the Regents in New York, the Medical Council of Pennsylvania, or the State Board of Health in Connecticut. It is unwise, and, in most States impracticable, to place this authority in the hands of any single medical society, owing to the fact that all incorporated

78 Atlanta Medical and Surgical Journal, 1893, x, 129.

State societies are equal in the eyes of the law, and each is of so much influence as to antagonize the limitation of control to the other.

In Alabama and in North Carolina alone has it been found possible to entrust this power to a single State society. In the former, in 1890, Dr. Cochran, of the Board of Censors, says: 74 "We have a very few homoeopathic practitioners in Alabama; but a considerable number of doctors, who, graduated in eclectic schools, have availed themselves of the advantages we have to offer them, and have become good working members of our organization." In North Carolina, the law making it the duty of the State Medical Society to examine and license all practitioners of medicine and surgery was passed in 1858-9, at a time when but little opposition from other sources was likely to have existed. In 1880, as a result of the law, there was a very small number of irregular practitioners in the State.

The experience of the vast majority of the States of the Union is in favor of the appointment of the controlling board by the Governor of the State. It has been urged that this will tend to make the position political and partisan. This effect may be modified in some measure by providing that at least one member shall be annually changed. In some States it is provided that appointments shall be made from nominees Medical societies, of incorporated State societies. however, are not free from the possibilities of partisanship. Certainly, medical appointments in the State of Massachusetta by its Governor and Council have rarely been open to the charges of personal or political favoritism prevailing over conspicuous merit.

A more important question relates to the transfer of the control to the State Board of Health or to an especial board. The former exercises this authority in comparatively few of the States, although with conspicuous success in Illinois. State Boards of Health, however, are not exclusively medical boards. Questions which come before them are of so various a character that lawyers, engineers, merchants and mechanics, as well as physicians, are needed in their deliberations. The regulation of medical practice relates solely to qualifications, of which physicians are the best competent to judge; and the question of determining these qualifications would, in the end, necessarily be assigned to the medical members of the board. These members should be especially adapted to the purpose, and might be unfitted for the general duties of Boards of Health.

They should be selected as intelligent, educated, fair-minded, honest and upright representatives of the entire profession. They should be practitioners and not teachers, that there should be no possibility of the suggestion of favoritism in the treatment of an especial set of applicants. The members of the board should have been in practice for a number of years, that their inquiries into the qualification of the applicant might be based less on theoretical than on practical knowl-They should be representatives of different sections of the State, that the interests of the public in the remote villages might be equally protected with those in the most populous cities. The experience of the various States is largely in favor of the establishment of a Board of Examiners independent of the Board of Health.

The question which next presents itself relates to

the composition of the board with reference to the rep-

resentation of the incorported State medical societies. Shall these be represented in a single conjoint board, or shall there be as many independent boards as there are incorporated societies? From the ease with which corporations are formed in the various States under a general law, the question practically resolves itself into the representation of the three societies with the largest memberships.

If a single board is established it should have an equal or a proportionate representation of the regular physicians, the homocopathic and eclectic physicians. The establishment of a single board is objected to by some of the regular physicians, especially the older members of the profession, on the ground that it compels them to approve the licenses of homocopathists and eclectics, whom they have already opposed in every possible way as undeserving the confidence of the community. It, furthermore, makes the homeopathists and eclectics judges of the qualifications of students of the regular schools, and permits the former to combine in opposition to their license, which would destroy the advantages to be derived from the regulation of medi-

The homosopathists object to a conjoint board, if formed on proportionate representation, since such an apportionment would give a majority representation of regular physicians, and partisan zeal, favoritism and illiberality would result, with a tendency to dimin-This view ish the number of homœopathic students. is advocated by Dr. H. M. Davenport,75 who gives as an illustration the experience in Canada, where, of 1,230 licenses given in eighteen years, only 19 were given to homoeopathists. He also adds that in Minnesota, in 1888, where a single board exists with a homœopathic minority, only one-fifth of the homœopathic applicants for registration "were allowed to pass." On the contrary, one of the homocopathic members of the Examining Board of that State "spoke very highly of the Minnesota law and its workings, and said he was entirely satisfied with the way the remainder of the Board conducted the examination, and with the fair way in which he was treated and allowed to conduct his examination. He considered a common Board of Medical Examiners as the best." 76 The feeling here expressed can hardly be considered to prevail among homoeopathic physicians, and the argument of H. M. Paine before the Judiciary Committee of the New Hampshire 77 legislature perhaps more nearly represents their views. The latter are expressed 78 editorially as follows:

"On general principles it is a good thing to make a strong stand against medical examining boards, provided we have the strength to resist the demand for the establishment of such boards; if we have not, then it will be good politics to acquiesce to the demands, and to insist that there shall be created separate and distinct examining boards for the homœopathic profession. Under no consideration should we ever be led to accept the single board plan. . The greatest danger of the single board rests in the fact that a large number of students will prefer to graduate from institutions in sympathy with the majority of the examiners."

The objection to a triple board is to be found in the probability of separate standards of proficiency, which would diminish the value of the license. Candidates

<sup>North America Journal of Hom., 1869, iv, 706.
North-Western Lancet, 1891, xi, 7.
Hahnemanian Monthly, 1891, xxvi, 281.</sup>

rejected by one board might seek for a license from a set of examiners less exacting in their demands, unless prevented by law. The license thus obtained would be as valid as if secured by more exacting methods. If it is replied that a supervising board might be established, as in New York and in Pennsylvania, it may be said that it makes the machinery of licensing too cumbersome in requiring four boards where one would

A single examining board has the advantages of simplicity, uniformity of standard, and freedom from partiality. Although appointments to it might be made which would result in friction, quarrels and dissension, the benefits to arise as regards the public are such that this method of carrying out the designs of the law should first be tried. None need serve upon it who are unwilling to act from the best of motives. And as harmony prevails in many medical boards thus constituted, in various sections of the country, equal success may be anticipated from future attempts. One safeguard should be insisted upon, either exclude the subjects of materia medica and therapeutics from examination, or make the representatives of the several schools the sole judges of the qualifications in these subjects, the applicant having the choice of the various sets of questions prepared.

It should be the duty of the Board of Examiners to consider and decide upon the qualifications of the candidates, and to grant a license to practise to the successful candidates.

What shall be these qualifications? The custom in the various States, as we have already seen, differs widely. In some, the possession of a satisfactory diploma of graduation from a medical school or institution incorporated with the privilege of granting diplomas, suffices. In others an examination is necessary. In some, a satisfactory diploma is necessary that the candidate may be examined; in others, the examination is the sole test of the qualifications. If the diploma is to be regarded as satisfactory, it must be inspected and verified. The definition of what is a satisfactory diploma must rest with the board, and what is satisfactory in one State may prove to be the reverse

In the earlier days of legislative action the diploma of a regularly chartered medical school, or the certificate of a chartered licensing body as a State, county or district medical society, was regarded as satisfactory evidence of a sufficient degree of education. This led to the infamous traffic in American diplomas throughout this country and in various parts of the world, which became a national disgrace, and from which the country even now has not wholly recovered. Rival medical schools of low grade were legally incorporated, especially in the Western States, with all the rights and privileges of the best schools. Such favorable terms were offered to students that it became possible to be graduated in the course of a few months without any especial preparation. Courses of lectures were made short and examinations easy, students even being informed in advance of the questions to be asked. This corrupt sale of diplomas reached such a degree in Pennsylvania that, in 1872, a committee of the legislature investigated the subject and found that for a long time diplomas had been sold, in many instances to persons without any medical or scientific attainments whatever. An instance is given where a diploma was made out for an infant two years old at a charge of

\$200.00. An itinerant exhibited on street corners, and wherever he went, three diplomas from as many medical colleges in the United States.79 John Buchanan, of Philadelphia, was the ringleader in this business. He obtained control of the charters of extinct schools, got new charters, and advertised extensively the sale of his diplomas. The courts were obliged to sustain their legality, but finally he was exposed through a reporter of the Philadelphia Record, to whom he sold, under various fictitious names, eight diplomas, several conferring the degree of M.D., one that of D.D., another that of D.C.L., and still another that of LL.D.80

The Illinois Board of Health was most instrumental in putting an end to this traffic in fraudulent diplomas. In 1880 it refused to accept as evidence of qualification the diplomas of twelve legally chartered medical colleges. In 1884 at it showed the nature of the traffic in diplomas in Massachusetts. This State enacted a general law in 1874 82 providing that corporations might be formed by voluntary association for "any educational, charitable and religious purposes, for the prosecution of any antiquarian, literary, scientific, medical, artistic, monumental, or musical purposes, etc." Several medical schools were formed under this statute, the most famous of which was the Boston Bellevue Medical College, incorporated May 25, 1880. It was charged with illegally issuing or selling its diplomas. Its officers were arrested on the accusation of using the United States mails for illegal purposes. They pleaded in defence that they were empowered by the laws of Massachusetts to issue diplomas and confer degrees without any restriction as to the course of study or professional attainments. The United States Commissioner held the plea to be valid and dismissed the defendants. Within a fortnight "the American University of Boston" was incorporated. A few weeks later the "First Medical College of the American Health Society " was added to the medical schools of Boston. When the attention of the legislature was called to this abuse of the law it prohibited corporations organized for medical purposes under this statute from conferring degrees, or issuing diplomas or certificates conferring degrees unless specially authorized by the legislature so to do. But the names of the Boston Bellevue Medical College, the American University of Boston, and the First Medical College of the American Health Society, are still to be found among the legally incorporated institutions of Massachusetts.

The importance of the inspection of diplomas is thus apparent that fraudulent diplomas may be excluded. Some of the low-grade schools have improved their facilities for giving instruction and their requirements for graduation to such an extent that the diploma after a certain date is satisfactory evidence of qualification, whereas those given in years before such a date are unsatisfactory. Not only should the diploma be acceptable, but it must also be verified. Diplomas have been lost, sold and stolen, and have been cancelled or counterfeited, It has, therefore, been found necessary for verification, that the candidate presenting a diploma as to his qualification for a license, should make an affidavit, before a person authorized to administer oaths, that the diploma is genuine, not given for money

Sibbert: Trans. Med. Soc. Penn., 1880, xiii, 1, 53.
 New York Med. Record, 1890, xxxvii, 377.
 Report Illinois State Board of Health, 1884, vi, 9.
 Statutes, 1874, ch. 375, sec. 2.
 Statutes, 1883, ch. 208.

alone, nor cancelled, that the applicant is the person therein named and the lawful possessor, that it was procured in the regular course of medical instruction, without fraud or misrepresentation, from a medical school or institution legally incorporated at the time of its bestowal to grant medical degrees, having a full body of medical teachers, actually and in good faith engaged in the business of medical education, and during a definite period of time.

(To be continued.)

Original Articles.

SPINAL CONCUSSION .- TRAUMATIC SPINAL SCLEROSIS.1

BY PHILIP COOMBS KNAPP, A.M., M.D., Clinical Instructor in Diseases of the Nervous System, Harvard Medical School; Physician for Diseases of the Nervous System, Boston City Hospital.

To speak to-day of spinal concussion is proof either of ignorance or of heresy. I have perhaps examined the literature of the subject with enough care to absolve me from the charge of ignorance, but I cannot avoid the other charge. I do not, however, intend to maintain the thesis of "spinal concussion" in the strictest sense. In that sense it may be defined as a condition in which paraplegia follows injury, where the cord has sustained no gross lesion, and where the trouble may be referred to molecular changes in the finer nerve elements leading to loss of function. cannot admit to-day that impairment of function is not attended with structural change in the cord. The brilliant demonstrations of Hodge at the meeting of the American Physiological Association in 1891, added to his previous work and the experiments of Korybutt-Daskiewicz, have taught us that even ordinary fatigue is attended with visible changes in the ganglion cells. Hence all our old notions as to functional disease must be abandoned.

The thesis which I wish to maintain is that after injuries which do not give rise to fractures or dislocation of the vertebræ, direct crushing of the cord, spinal hemorrhage, etc., we may have affections limited chiefly to the spinal cord, of insidious onset, and of grave prognosis. Hence I have chosen the old term of spinal concussion as a title for this paper, rather because it was a more striking protest against some modern views than because it was absolutely correct.

In former times it was unnecessary to maintain such a thesis as this. Everything was regarded as spinal concussion. To-day many maintain that the spinal cord counts for nothing in the so-called "traumatic neuroses." The cerebral origin of many symptoms is generally accepted. The French go still farther, and seem inclined to ascribe to all the symptoms a psychical origin, and they will speak only of "traumatic hysteria." Others still claim that most of the symptoms are due not to injury but to litigation. Furthermore, various symptoms which were once thought indicative of spinal disease, pain and stiffness in the back, difficulty of locomotion, and the like, have been found to be due to strain of the spinal muscles and ligaments and to be no indication of disease of the cord.

1 Read before the Boston Medico-Psychological Association, January 21, 1894.

While on the one hand clinicians have differentiated many distinct affections among the "traumatic neuroses." and have shown that lesions of the spinal cord have little if any connection with them, anatomists and surgeons have sought to prove that injury can seldom if ever produce disturbances in the cord, unless it be so great as to exert absolute crushing force upon the spinal column.

Among the prominent supporters of this opinion was Watson, who collected a mass of anatomical, experimental and clinical data in support of his claim. It will be well to examine his facts and arguments with considerable care, in order to decide how thor-

oughly he has established his position.

Watson 2 advanced certain a priori arguments to show that injury to the cord, without injury elsewhere, is unlikely. These are familiar and have a certain force. "The points to which attention should be especially directed," he says, "are: (1) the protection afforded to the cord by the vertebral column; (2) the spinal cord and its coverings do not nearly fill the vertebral canal; (3) they are at no point adherent to or in contact with it; (4) the bony wall is everywhere cushioned with connective or adipose tissue, etc.; (5) the remaining intervening space between the bone and cord is filled with spinal fluid; (6) every vertebral nerve is so placed as to act as a most efficient stay, thus preventing any swaying or other motion. The relative points for consideration between the spinal cord and brain are: (1) the difference in the weight of these organs; (2) the contact of the membranes of the brain with the skull, etc." I may add in passing that Watson found the average weight of the dogs he used for experiment to be 20.17 pounds; the average weight of their brains was 2.32 ounces, and of their cords, 182.1 grains. In man the average weight of the cord is between twenty-five and thirty grammes; the brain weight is relatively much greater than in the dog, about 0.02 of the body weight instead of 0.007.

In addition to these arguments Walton has shown that if the spinous processes of the vertebræ be struck the tendency is for the force of the blow to be transmitted through the arches of the vertebræ to the bodies, instead of being carried in any way to the cord

These arguments, of course, have their value, but a priori arguments are not scientific proof, and they demand further evidence before they can be accepted.

In this counection it may be said that a somewhat similar series of arguments might be brought forward to prove that it was impossible to have a traumatic lesion of the lung without injury to the chest wall. The lung is a spongy, elastic body, easily compressible, and moving freely within a strong, elastic cage. It is difficult to conceive how any external force could injure it, unless the force were so great as to crush the chest wall. Nevertheless, a man came under my observation a year or two ago who fell with a mass of snow from a roof, striking the ground about thirty feet below. At the autopsy Dr. Councilman found the thorax intact, but there was an extensive rupture of one lung.

Watson performed certain experiments to show that the spinal cord is but little exposed to injury. These experiments were performed upon dogs, and consisted

² B. A. Watson: An Experimental Study of Lesions arising from Severe Concussions, Philadelphia, 1889. ³ G. L. Watton: Contribution to the Study of the Traumatic Neu-ro-Psychosos, Journal of Nervous and Mental Disease, July, 1880.

in dropping the animals from a height of twenty-five feet, the dogs being so hoppled that in the great majority of the cases the blow was delivered on the nates. 141 animals were experimented on. He found not infrequently lesions of other organs produced by the injury which gave rise to serious and sometimes fatal symptoms. With regard to the nervous system, he draws from his experiments the following conclusions:

"(1) Concussive accidents never produce pathological changes in the spinal cord except when great force has been applied to the spinal column, and these cases are generally, if not always, complicated with a fracture of the body of a vertebra, dislocation of the same, rupture or stretching of vertebral ligaments, or severe lesions in other parts of the body which terminate quickly in death.

"(2) The symptoms indicative of these morbid conditions are immediately developed, rarely become intensified by reason of morbid changes occurring in the spinal-cord - exceptional cases being limited to fractures and dislocations, or those in which a slow hemorrhage occurs, causing pressure on the cord.

"(3) It is frequently very difficult to diagnosticate stretching of the vertebral ligaments on the living subject, and there are ample reasons for believing that this lesion is frequently overlooked in post-mortem examinations.'

Let us now turn to Watson's experiments and examine them with some care. Out of the 141 we must at once throw out 36 where no satisfactory autopsy was made. In 59 cases the nervous system is reported to be normal. In 50 there were changes of some sort, 32 of these occurring without any lesion of the vertebral column or its ligaments. In these thirty-two cases we find such changes as hyperæmia of the cord, punctate hemorrhages into the cord, a granular appearance of sections with indistinctness of the nerve fibres and difficulty in making out the axis cylinders and the like. In some of these cases the animals exhibited no symptoms in the few days during which they were kept alive. Watson apparently regarded such changes as insignificant, for in a subsequent communication 4 he said: " Does it not seem absurd to attribute to a single punctate hemorrhage, or even a half-dozen of these little pathological lesions, the power of exciting a disorganizing process in a healthy spinal-cord which may ultimately produce the death of the patient?" To any one with a rudimentary knowledge of the pathology of the nervous system such changes are not insignificant, and are more marked than those we find in certain fatal affections, such as Landry's paralysis. In fact it seems clear that Watson's first conclusion is in no way supported by his own experiments.

In regard to the second conclusion Watson has still further elaborated his position in the paper just quoted. "The question will now be naturally asked with reference to these cases: Would they not have developed inflammatory changes at a later period? I have not before me the data which would justify me in positively asserting that this result was absolutely impossible; but I can aver that, in all these experiments, one hundred and forty-one, there is not a single case which warrants giving an affirmative answer." It may be added that in these one hundred and forty-one experiments there is not a single case which warrants giving

⁴ B. A. Watson: The Relation of Concussion of the Brain and Spinal Cord to Inflammatory and other Morbid Conditions of these Organs, Journal of the American Medical Association, July 18, 1891.

any answer at all to the question. Out of the fifty cases in which there were lesions in the central nervous system only two were kept alive beyond ten days, one of these was put to death in eleven, the other in twenty days. Out of the fifty-nine cases where the nervous system was called normal, only six were kept alive beyond ten days, and the one who was kept alive longest was killed in eighteen days. In five cases where the animals were kept alive for a period of several months there is no record of any microscopical examination, and such examinations as were made, were "so remotely connected with the traumatism as to possess no interest!" Further comment seems unnecessary.

Let us now turn to another series of experiments having a similar end in view. Schmaus has experimented on rabbits by placing a bit of wood over the spine and giving it repeated blows with a hammer. In this way the concussion is of course less general. No injury whatever to the spinal canal was produced, but the animals showed various spinal symptoms, and on microscopical examination he found a fine granular degeneration of the ganglion cells, and changes in the nerve fibres, consisting of swelling and enlargement of the axis cylinders, and he also found foci of softening and fascicular degeneration: Hyperæmia and hemorrhage he considers to be secondary and to be without influence on the process. In some cases he found beginning gliosis. The degeneration of fibres was under the place where concussion was applied, and was most marked in the lateral columns. He classifies the changes as simple necrosis of a part of the nervous elements, the interstitial tissue being intact; necrosis of the nervous elements with destruction of the interstitial tissue, and gliosis. Similar changes are found in man, and he reports cases to which I will return later. I will here cite his conclusions:

"(1) There is a direct traumatic necrosis of fibres; here belong the cases with positive anatomical lesions.

"(2) More fibres have died than we can recognize; thus are explained the cases with marked clinical symptoms and slight anatomical changes.

"(3) The fibres may be merely fatigued. Thus are explained the rapidly fatal cases with negative lesions, and the cases that recover.

"(4) The fatigue of fibres may in addition go on to their death (necrobiosis or morbid disposition with accidental new factors or indirect action). Cases with gradual beginning and positive anatomical lesions.

"(5) Gliosis. Termination in tumor formation."

Schmaus's experiments thus seem to show pretty clearly that injury may give rise to distinct changes in the spinal cord, sometimes of gradual onset. That such changes may give rise to spinal symptoms and may be of the gravest significance is apparent.

Let us now turn to a field to which Watson paid little attention and see whether clinical experience can support the result of experiment. Watson 6 stated that "concussion of the brain and spinal cord is always attended with immediate symptoms. Concussion of the brain and spinal cord without immediate symptoms is a mere hypothesis, a myth, and has no real existence." "The mere assumption that serious results frequently arise from wholly unimportant injuries is

⁵ H. Schmaus: Beiträge zur Pathologischen Anatomie der Rückenmark-erschütterung, Archiv für path. Anat. und Physiologie und für klin. Medicin, oxxii, 326, 470, 1890.
⁶ B. A. Watson: The Diagnosis of Traumatic Lesions in the Cerebro-Spinal Axis, and the Detection of Malingering referred to this Centre, Medical News, June 6, 1891.

not sustained by clinical observations or experimental investigations." "There is not sufficient proof to justify the conclusion that any case of traumatic myelitis, or meningo-myelitis, has ever had its origin from molecular disturbances or any pathological lesion which was invisible to the naked eye in an otherwise healthy spinal cord or its membranes." His experimental investigations, as we have seen, hardly warrant such statements. Let us see how the clinical observations correspond.

Let us turn first to a class of cases which have been pretty thoroughly studied, the cases of traumatic lumbago or "railway back." A healthy man received a blow in the small of the back by falling on the corner of a box. After that he had numbness and prickling in the legs, weakness of the legs, and pain in the back. The muscles of the back were rigid and tender, and motion increased the pain. The movements of the legs were rather weak and the knee-jerks a little exaggerated.

Another man fell down stairs striking his back. He had much pain and tenderness over the lumbar muscles, the pain being increased on moving. The left leg was weaker; there was constant desire to micturate and apparently a little dribbling after micturition. The sexual power was lost for some time.

Such cases might be multiplied, but they are familiar to all. Page has given an interpretation. There is a pseudo-paralysis, the pain in all movements being so great that the patient is really afraid to move at all. Micturition may be interfered with from the lack of the natural support of the lumbar muscles, from nervous excitement, or from the difficulty of passing water in bed. The "strange feeling of weakness in the legs" he thinks due to the strain.

Now, although I am ready to admit with Page the probability that these symptoms may all be explained on the hypothesis of a muscular strain, I do not think that in the present state of our knowledge we can say definitely that such symptoms (weakness of the legs, paræsthesiæ, exaggerated knee-jerks, disturbances of micturition, etc.), can not be due to disturbances in the cord itself.

In this traumatic lumbago or "railway back" we have a twisting and stretching of the fibres of the mass of muscles and fascise in the lumbar region. Any force that will injure these tough, resistant fibres must inevitably do harm to the less resistant nerve fibres in the same region. Peripheral neuritis, as I showed some years ago, is not uncommon as a complication in these cases. Changes in the cord may be associated with peripheral neuritis, as Pal shows in his recent monograph on the subject. Furthermore, if there be also a stretching of the nerve this stretching may have an_effect on the cord.10

Page admits the possibility, in rare cases, of arthritis of the vertebral articulations, which Watson thinks of slight importance. We know how obstinate an arthritis a comparatively slight injury will cause in the knee or shoulder, and there are certain possibilities not only of chronic arthritis in the vertebral articulations, but also of extension of inflammation into the canal. The evidence of this has not yet been produced, but the possibility exists.

7 H. W. Page: Railway Injuries, Philadelphia, 1891.
P. C. Knapp: Nervous Affections following Injury, Boston Medical and Surgical Journal, November 1, 8, 1888.
J. Pal: Ueber multiple Neuritis, Vienna, 1891.
P. Tarnowski: Alterations de la moelle épinière causées par l'elongation du nerf sciatique, Archives de Neurologie, July, 1886.

The spinal cord receives its main supply of blood from arteries which go off from the intercostal and lumbar arteries and enter the vertebral canal through the intervertebral foramina. A severe twisting or stretching of the soft parts about these vessels may give rise to disturbances which can affect the bloodsupply of the cord.

(To be continued.)

TUMORS OF THE BREAST.

BY J. COLLINS WARREN, M.D., Professor of Surgery in Harvard University. (Concluded from Vol. exxx, No. 26, p. 645.) CHRONIC LOBULAR MASTITIS.

THE following case is quoted as a contrast to those which have preceded: Mrs. K., twenty-seven years old, married, applied to me recently for an opinion upon a growth in the breast concerning the nature of which she was very anxious. Her only child is fourteen months old, and she first noticed a lump in the breast when the child was one week old. She did not think anything about it at that time, and continued to nurse the child for about three months, and so far as she remembers the growth disappeared. About two months before she consulted me she began to have pain in the lower inner quadrant of the left breast without having sustained any injury beyond the strain of carrying the baby, who was ill, during the previous month. She then noticed that the growth was there, and had somewhat increased in size. When seen by me for the first time on January 5, 1894, the lump was about the size of a plum, but firmly attached to the glandular tissue. The age of the patient and the seat of the growth (in the inner and lower quadrant of the breast) were both points in favor of a non-malignant growth. There was a small gland in the axilla, but it was soft and freely movable. There was no retraction of the nipple. There was no dimpling of the skin over the seat of the tumor. These points, and the fact of the existence of pregnancy and confinement at a not remote period, favored the diagnosis of a lobular mastitis. The patient reported herself a second time on February 15th, when the lump had diminished somewhat in size. On March 8th, a third examination showed that the lump had divided into two unequal portions, and there had been a very considerable diminution in its size since the first examination, and the patient departed, promising to report if any further development took place. Not having heard from her since, I feel confirmed in the opinion that this was nothing but a simple inflammatory mass. This case is reported as a type of several observed in young married women, in which the growths have subsequently disappeared.

CHRONIC MASTITIS, WITH FORMATION OF CYSTS.

Many cases of this affection occur at the period of life when malignant disease is most frequently noticed. A differential diagnosis is, therefore, of great importance, and in many cases it is almost impossible to determine by an ordinary examination the exact nature of the tumor.

In the present case, the patient, an unmarried lady, forty-three years of age, consulted an able physician in Paris for a tumor which had suddenly appeared, with some pain, in the left breast. The opinion was expressed that it might be malignant, and that the breast should be removed at once. The patient decided, therefore, to return home immediately, and, in spite of the difficulties of travel caused by the cholera scare, succeeded in arriving home promptly.

Following is a brief account of her previous his-

In November, 1875, she found a lump in the lower left side of the left breast, near the surface, about an inch and a half long, and as thick as the little finger. Her physician stated that it was outside the breast proper and nearly unattached. For two years or more she applied iodine ointment, which slightly decreased the size, and afterwards it continued to decrease without treatment. Her physician examined the breast every year or two until 1888. In one of the early years she felt, suddenly, a sharp, darting pain, reappearing a few days later; but, with this exception, she had neither uneasiness or aching sensations.

In August, 1890, she noticed that the left breast seemed slightly larger than the other, but so slightly that she thought it imaginary, the lump being evidently smaller. About January, 1892, a difference in size between the two breasts was perceptible; and in August, 1892, she suddenly found in the upper hemisphere of the left breast a large lump. The next day a sharp pain darted up and down the left side, as has

already been stated.

One sister of her mother died of cancer of the breast, one of cancer of the liver, and one of internal She states that she has received four blows on the left breast — two soon after the discovery of the first lump and directly upon it, and two in recent years upon the nipple. I advised a preliminary microscopic examination of the breast, and found that the principal growth was a cyst, the walls of which contained glandular tissue, but no cancer.

Owing to the extensive infiltration of the breast, together with the family history, an operation for the removal of the breast was advised, and was performed September 26, 1892. There being some enlarged glands in the axilla, it was decided to remove these also. The wound healed by first intention, and the convalescence of the patient was uneventful.

The following is the account of the microscopic examination of the tumor by Dr. W. F. Whitney:

"The tumor of the breast in the case of Miss B. showed a diffused fibrous mass, in which were cysts with smooth walls of varying size. There was no sharp line between the growth and the breast tissue.

"Microscopic examination showed the structure to be fibrous."

"Microscopic examination snowed the structure to be increase tissue in which were gland acini, in which could be seen small portions in all stages of dilatation, and evidently the cause of the large cysts seen with the unaided eye. There were a few slightly enlarged lymph glands, which under the microscope showed similar hyperplasia.

"The diagnosis is diffused fibrous mastitis, with retention cysts and hyperplastic lymph glands."

By some observers, the presence of multiple cysts of this nature is regarded as indicative of a new formation of gland tissue. If such were the case, these specimens would represent one type of cystic adenoma. The specimen corresponds very closely to the condition described as such by Schimmelbusch.

An examination of the scar eighteen months after the operation showed no signs of a return of the disease, and the patient reports her general health excel-

DOUBLE AMPUTATION OF THE BREAST FOR CANCER.

A simultaneous occurrence of cancer in both breasts is a very rare disease. In my own experience I have never before had occasion to perform this operation.

The following are the notes of the case:

Mrs. E., forty-two years of age, is a slender, yet active appearing woman, and has always done a great deal of work. She has had no children. There is no history of any cancer in the family. Has enjoyed

good health up to the time of present illness.

She first noticed a lump in the right breast in July, 1892. The growth was situated in the lower outer quadrant. There was no perceptible change in the condition of the breast until about a month before I saw her, in June, 1893, when a general enlargement of the breast took place, the lump remaining about the same size as before. About six weeks before I saw her, a lump was first noticed in the left breast above the nipple. There was no history of any blow, or any cause for either of these growths. There was a retraction of the nipple on both sides, that on the left side drawing in with the appearance of the growth, as the right had done previously. Both of the growths in the breast appeared to be ill-defined, particularly that on the left; and, owing to the simultaneous presence of disease in both breasts it was deemed best to remove a fragment for microscopical examination. A piece was removed with the punch, and proved to be malignant. Removal of both breasts was accordingly advised, and the operation was performed on June 8, 1893. The operation on each side was practically the same, the coverings of the breast and gland being freely removed, and the dissection being continued into the axilla, glands on both sides being found present. No portion of the pectoral muscle was removed, as it was deemed advisable not to make the operation on either side too extensive.

The operation lasted about one hour, and the patient was in good condition at the end of that time. The operation was performed with strict aseptic precautions, and no antiseptic fluid was used, the wound being sponged with dry sterilized gauze. There was a slight shock that evening, the temperature falling to 98°. The amount of febrile reaction was slight, the temperature reaching 100.8° on the third evening, and returning to normal on the fifth day, when the catamenia appeared. The stitches were all removed on the ninth day, the union being complete throughout. No drainage-tubes were used. The patient returned to her home from St. Margaret's Hospital on the

eighteenth day.

The following is the report of the examination of the breast by Dr. W. F. Whitney:

"In the right breast there was a dense retracting nodule in the midst of the breast tissue. This was marked by yellow opaque lines and dots, and the outline was irregularly marked opague lines and dots, and the outline was irregularly marked off on the surrounding fat tissue. The axillary glands were enlarged, and very firm and dense, and replaced by a new growth. In the left breast was a similar condition, only less advanced, and the glands were much smaller.

"Microscopic examination showed in both a similar condition,

namely, a dense fibrous network, the meshes of which were filled with small epithelial cells.
"The diagnosis is scirrhous cancer."

The patient remained in good health during the summer, but a nodule appeared in the cicatrix of the right breast in the autumn, and was removed with cocaine. Symptoms of chronic bronchitis slowly developed, and the patient died in March, 1894, evidently from a generalization of the cancerous disease.

EARLY REMOVAL OF THE BREAST FOR CANCER.

The importance of an early diagnosis of malignant disease of the breast has long been insisted upon by all writers.

The following case is, therefore, reported as an example of an effort to operate as early in the history of the case as possible:

Mrs. H., fifty years of age, has been more or less of an invalid for several years. Has not yet had the change of life. Her family history is not good, her mother having died of cancer of the breast. As a young woman she was warned by her physician to be on the lookout for the appearance of a growth in the breast at a certain period of life. About a month previous to the appearance of the nodule she had noticed a new pain in the left breast, beginning at the spot where the tumor subsequently appeared, and crossing the breast diagonally. On March 21, 1893, she discovered a lump that was not noticeable on the 17th. The growth was, therefore, presumably of very short duration. It appeared to increase slowly from this date, gradually becoming more painful, until April 9th, when I first saw the patient.

On examination, a small lump was discovered near the inner margin of the upper inner quadrant. It was ill-defined, but did not appear to be much larger than a lima bean. No nodule was found in any other part of the breast or in the axilla. An exploratory operation was made on April 11th. Cocaine having been injected hypodermically, a small fragment was removed with the punch, and the diagnosis of cancer was made. On April 18th an operation for the removal of the breast was performed, and a clean dissection of the axilla was made at the same time. The fascia of the pectoral muscle was dissected away, but the muscle itself was allowed to remain intact. wound was united throughout by sutures, no drainagetubes being used, and healed by first intention, the patient returning to her home from St. Margaret's Hospital about three weeks after the operation.

"A microscopic examination of the tumor by Dr. Whitney showed a small dense nodule in the periphery, with an irregular retracting outline and small minute yellow points and lines on the surface. There was a second nodule, similar in character, in the midst of the breast tissue and near the nipple. The breast tissue in general was firm and fibrous.

the midst of the breast tissue and near the nipple. The breast tissue in general was firm and fibrous.

"Microscopic examination showed the growth to be made up of solid masses of epithelial cells separated by a dense fibroustissue network. There were a few slightly enlarged axillary glands in which occasional epithelial cells were to be found.

"The diagnosis was scirrhous cancer, with commencing implication of the lymph glands."

plication of the lymph glands.

"The diagnosis of typical carcinoma was confirmed by Dr.
W. T. Councilman."

The points of interest in this case appear to be the early recognition of the presence of a growth in the breast by the patient and the establishment of a diagnosis of cancer, with prompt operation.

Notwithstanding the fact that an early operation was performed upon the breast containing a tumor no larger than a bean, the presence of caucer was revealed not only in other portions of the breast, but minute deposits were found already in the axillary glands. Such an observation as this emphasizes the importance of the complete dissection of the axilla in every operation for malignant disease of the breast.

An examination of the patient twelve months after the operation showed that as yet there has been no sign of a return of the disease.

In a previous paper on this subject, some cases were

reported which had enjoyed an immunity from cancer after amputation of the breast.2 The subsequent history of these cases is as follows:

Mrs. B., patient of Dr. Leslie, of Amesbury, was operated upon for extensive carcinoma of breast and axilla, July 9, 1885. Dr. Leslie informed me of her death, about one year ago, of pneumonia. There had been no sign of a return of the disease.

Miss B. was operated upon for scirrhous cancer of the breast, December, 1884. The patient was married October 15, 1888, after an engagement of seven years' standing. She has reported to me from time to time since, and there has been no return of the disease.

Miss J. was operated upon in June, 1884. was a small cancerous nodule in a scirrhous breast, and no involvement of the axilla. Dr. M. D. Clarke informed me recently of her death from apoplexy, at which time no trace of a return of the disease was

Grace M. was operated upon in 1882, for colloid The breast alone was recancer of the breast. A nodule the size of a hen's egg was removed in 1888 from the axilla. Within a few weeks she has been seen by me in perfect health, with no sign of a return of the disease.

Mrs. C. was operated upon, in 1887, for scirrhous cancer of the breast. There was an extensive infiltration of the glands of the axilla. She writes in March, 1894, "my general health continues very good indeed, and there is still not the slightest indication that there will ever be any return of the trouble."

HEMORRHAGE AFTER OPERATIONS ON THE NASAL SEPTUM.

BY A. C. GETCHELL, M.D., WORCESTER, MASS., Surgeon to the Throat and Nose Department of the Worcester City Hospital and Washburn Memorial Hospital.

TROUBLESOME hemorrhage after operations on the nasal septum must be very uncommon. The books I have been able to consult make but slight note of such complication. Ingals does not speak of it. Sajous regards it as of no consequence. McBride says nothing about it; neither do Watson, Schech or Voltolini. Seiler says it can always be controlled by placing borated cotton on the spot for a few hours. "The hemorrhage is sometimes considerable, but rarely alarming" (Browne). "Surgical nasal hemorrhage, especially from the septum, is significant only as a temporary mask to the field of operation" (Jarvis in "Burnett's System"). "In no case have I had serious annoyance from hemorrhage" (Bosworth). "Occasionally the nose may need plugging" (MacDonald).

For literature on the subject I have carefully looked over the catalogue of the Surgeon General's Library and the files of the "Index Medicus," and can find only a case reported by Dr. A. H. Smith, of New York, in the Archives of Laryngology, 1883, iv, p. 132.

This paper is based upon this case, three of my own bearing upon the question of hemorrhage following operations upon the anterior part of the septum, and one upon the posterior part.

The nasal septum gets its arterial supply from the two terminal branches of the spheno-maxillary portion of the internal maxillary artery. Posteriorly the artery of the septum passes obliquely downwards

² Boston Medical and Surgical Journal, April 11, 1889.

and forwards and anastomoses with the ascending branch of the descending palatine which comes up into the nose through the anterior palatine canal of the superior maxillary bone. Both these vessels are of small size, and I can find no mention of any abnormality of either.

CASE OF DR. SMITH. E. N., aged about sixty-three, presented himself at the hospital clinic November, 1882, with obstruction of the left nostril, occasioned in part by a sharp horizontal ridge projecting from the cartilaginous portion of the septum. The apex of this ridge was removed with a bistoury, leaving a cut surface about four lines long by less than a line in breadth. The operation was accompanied by a profuse flow of blood, the stream as it left the nostril being as large as the shank of a laryngeal mirror. This continued for some minutes without abatement, when it was arrested by pressing cotton loaded with dry tannin upon the bleeding surface. During the following night the bleeding recurred, and was controlled by plugging the nose posteriorly and anteriorly. plugs were removed after forty-eight hours, and soon after the bleeding recurred with great severity, requiring a repetition of the procedure, which controlled the bleeding for some hours; but later the blood forced its way past the plug, and was stopped by injecting persulphate of iron. Dr. Smith adds: "When I saw the patient six days after the operation, his lips were bloodless, and his face had the tallowy appearance in-dicative of severe hemorrhage. That so much blood should be lost from so small a surface would indicate that a vessel of considerable size must have traversed the ridge, reaching nearly to the crest, a very unusual occurrence.

The following four cases occurred in my own practice:

CASE I. R. D., aged forty-six, railroad conductor. A large, rather fleshy man. His general health has always been good, that is, he has never been kept from work. Has a good relish for his food and digests it fairly well. But he has for some time had some dyspnœa on exertion, and has never been able to get a life insurance. The symptoms referable to his nose and throat were inability to breathe through the left side of the nose, coughing and choking at night, catarrh, hoarseness amounting often during the winter to aphonia. There was very marked thickening of the cartilaginous septum, the result, according to the patient's statement, of an injury early in life, quite occluding the opening and causing a deformity apparent from the outside. The uvula was very much elongated, and there was a chronic inflammation of the larynx so severe that the cords could not be differentiated by color from the other parts. The mucous membrane of the entire tract was inflamed and spotted with dirty brown crusts. Examination of the heart showed area of dulness not appreciably altered. The first sound was weak, and the second accentuated, especially over the lower sternal area. Rhythm regular, pulse 120. The urine was normal as to reaction, specific gravity, and the absence of albumin and sugar. The sediment contained an abundance of the crystals of the phosphate of lime.

In the course of his treatment the excessive tissue in the uvula was removed with scissors without any inconvenience as to pain or bleeding, and much to the relief of some of his symptoms. It was deemed advisable to remove the obstructing cartilage in the nose,

which was done at a subsequent time. Cocaine was used. The piece was removed entirely by the knife, somewhat to my surprise, as I usually have found some bone in these growths. The cut surface was about half an inch in either diameter. The bleeding was exceedingly profuse; indeed, the blood ran in a steady, rapid stream, and looking into the nose an artery of considerable size was seen spurting in the upper part of the wound. It was with a good deal of difficulty that the bleeding was checked, and only after the loss of a large amount of blood. In a very short time, however, it recurred as badly as ever, and all efforts to stop it were unavailing until the nose was solidly plugged, posteriorly and anteriorly. Even then the blood forced its way past the plugs, and was finally stopped by firm pressure from the outside. From the time of the operation till the bleeding was finally stopped, fully three hours elapsed, a good deal of this time being taken up by keeping direct pressure upon the bleeding surface, the only way in which the bleeding could be stopped even temporarily. The plugs were removed after thirty-six hours, and the subsequent history of the case was uneventful.

Case II. Miss A. D., aged nineteen, had a small projection from her septum in its auterior part. I had previously, within a month, removed enlarged faucial tousils with no unusual hemorrhage. The bleeding that followed the very slight operation on the septum was very profuse and exceedingly difficult to control.

was very profuse and exceedingly difficult to control.

Case III. L. L., a farmer boy, aged twenty. This patient had a ridge running along the right side of the septum which was causing trouble enough to justify its removal. When I cut into the spur at its anterior extremity, I opened an artery that pumped very markedly. But there was very little hemorrhage at the time of the operation. Later in the day the bleeding troubled him some, but it was annoying only.

CASE IV. Miss A. T., aged about twenty-seven, teacher. About four P. M. I removed with a saw a bony spur from the posterior part of the septum. There was no unusual hemorrhage at the time. At six she returned with the report that she had been bleeding freely for a short time. Blood was passing down the throat in considerable quantities. Both nasal cavities were full of clots, which were washed out. After ineffectual attempts to stop the bleeding, with the aid of a gum-elastic catheter I drew a plug into the posterior nares. Before this was secured there was a gush of blood into the throat and the plug was found washed into the mouth. I then gave ergot and inserted a tampon soaked with persulphate of iron into the nose wedging it against the sawn part, and, as the patient had lost a good deal of blood, placed her in a semirecumbent position with an ice-bag over her nose. The bleeding stopped. The loss of blood affected the patient's health for some time. About two months later I again operated in the same place with a burr, with no untoward results.

The artery opened in Case III was undoubtedly the ascending terminal of the descending palatine. Although I did not detect any pulsation in Case II (I did not look for it), it is fair to infer that there was a vessel of unusual size; else why should the patient have bled so? She had no hemorrhagic diathesis, as is shown by the previous tonsillotomy. In Case I, it may be that the altered nutritive conditions occasioned by the injury, and the increased amount of tissue deposited about the part, had made a larger blood-supply

necessary, and accordingly there resulted enlargement of the vessels. Furthermore, both in this case and that reported by Dr. Smith, it may be stated with positiveness that the blood-vessels had become atheromatous and consequently would not contract.

In both these cases the artery which was opened must have been an enlarged terminal of the ascending branch of the descending palatine. This artery may be of quite appreciable size as it enters the nose, as is shown by Case III, where for a time there was distinct spurting. This case is not by any means a rare one in my experience; indeed, it is a type of a class. But the hemorrhage is very exceptionally, even annoying, because the artery contracts and bleeding ceases soon of its own accord.

If the supposition be true that the vessel divided in Case I was the terminal of the descending palatine, one would expect to have found two bleeding points—one in the upper, another in the lower part of the wound; and that I am inclined to think was the case. But as the blood accumulated so very rapidly in the lower part of the nose, I could not demonstrate it to my own satisfaction or that of Dr. Homer Gage, who saw the case with me.

These considerations are of value in deciding upon operative procedures in adults. It is well recognized that disturbances of the upper air-passages affect different parts at different ages. In children and young adults it is the nose and upper throat that are affected by ordinary cold, while in older people the parts below the nose suffer. That obstructed pasal cavities are responsible for these conditions is also true, and the advisability of early restoring the nose to a normal condition is certainly well recognized. If these abnormal conditions are allowed to persist, distinct pathological changes take place in the naso-pharynx and throat which are more or less permanent in character. On the other hand, growths which would be troublesome in early life cease to be so later. It is not an uncommon experience to be consulted by elderly people for throat troubles and find spurs and other obstruction within the nose. Such patients have no disagreeable symptoms referable to the nose, but will recall that they did have earlier in life. The nose has adapted itself to the abnormal conditions, is doing its work fairly well, and as the mischief to the lower respiratory passages has already been done, the amount of good to be accomplished by intra-nasal surgery is questionable, especially in view of such accidents as this paper describes.

In Case I, however, the issue well justified the operation and would in a similar case justify operation. This was not one of the cases so common where a spur has encroached on a turbinated body which has adapted itself to the abnormal conditions and leaves some room, but the obstruction was in front of the turbinated body and blocked the nose as effectually at all times, as would a plug of cotton in the nostril. It also made cleansing of that side of the nose impossible, and after the removal of the growth, a large mass of blackish, friable matter was dislodged from the lower meatus. This extended around the curve of the lower turbinated body and had evidently been a long time within the nose, and must have contributed not a little to the diseased condition of the nose and throat. Furthermore, the removal of the growth permitted nose breathing nights, which was followed by a very considerable improvement of the patient's condition.

CONCLUSIONS.

(1) Operations upon the nasal septum may be followed by hemorrhage sufficient to very materially affect the health of the patient.

(2) The artery of the anterior (cartilaginous) septum may lie near the surface, be of considerable size, and if atheromatous may cause serious hemor-

rhage.

(3) Operations upon the nasal septum in adults should be advised only after carefully considering the good to be accomplished and the possible risks incurred.

Medical Progress.

REPORT ON DISEASES IN CHILDREN.

BY T. M. BOTCH, M.D.

At a Meeting of the New York Academy of Medicine February 15, 1894, Dr. William P. Northrup made the following communication:

SCORBUTUS IN INFANCY.

Pediatrists have recently learned to recognize newly a disease, and believe that they have saved a few lives in recognizing it. It is for the purpose of making the knowledge of this disease more general that the Section on Pediatrics comes before the Academy to-night. Sailors used to have scurvy before they took lime juice to sea; but do children and infants now have it? You will hear speakers here this evening say that it has been observed in New York, Boston, Cincinnati, Philadelphia and elsewhere. It was reported in Germany in 1873. In 1878 Dr. Cheadle reported three cases. No cases were recorded in the United States until 1891. Northrup had then reported eleven cases before the American Pediatric Society. One of these cases died, and the pathological findings proved of great value. Scurvy is a disease dependent upon the prolonged use of improper food or absence of fresh food. Its most characteristic symptoms are spongy gums and a tendency to hemorrhages. Notably these hemorrhages are subperiosteal collections of blood about the femora and other long bones, escaped blood into and beneath the skin forming petechiæ, and ecchymoses into the gums and membranes of the mouth, intestines, and pelvis of the kidney. The following combinations of symptoms appeared in several cases: spongy gums and swollen thighs; swelling of both thighs, gums spongy and bleeding; "black eyes," bloody passages, anæmia; spongy gums, swollen thighs, petechiæ, demonstrated subperiosteal hemorrhages.

Most cases have been attributed to persistent feeding of the infant on prepared infant foods and condensed milk. Even a small proportion of cow's milk and breast milk, according to some observers, are not sufficient to protect against this peculiar form of malnutrition. It occurs most among the rich, where strict regimen which has persistently excluded fresh food and fruit juices has been carried out. Among the poor, where the children received mixed food from the table, and consequently fresh food, they escape scurvy but suffer from rhachitis. The age most subject to the typical disease is the second year of life. The most typical symptoms are swollen and painful joints and spongy gums; the treatment, orange-juice and other fresh

¹ Annals of Gynæcology and Pediatry, March, 1894.

fruits, with proper diet. The disease is supposed to be a distinct entity, though it is often associated with rickets. It was formerly believed to be so closely associated with it as to deserve the name of acute rhachitis. Dr. Henry Ling Taylor read a paper entitled,

SCORBUTIC PSEUDO-PARALYSIS.

This term was chosen to emphasize a coudition frequently occurring in infantile scurvy as illustrated by the following cases: The patient, eleven and a half months old, had been fed exclusively on condensed milk, and was brought from the South for some supposed spinal affection. Local symptoms developed as follows: weakness in sitting up, later inability to sit up; inability to move the limbs and later the trunk; a tender swelling over the right thigh; spongy and bleeding gums; swelling about one eye; purplish spots; and a swelling about the right ankle. The nutrition became impaired, and she became sensitive to the slightest touch or movement. When first seen by the writer the condition was critical. Temperature was 105.5° F. She refused to nurse, and screamed loudly at every touch. She had eight teeth, around which the gums were swollen and spongy and ulcerated. The legs were motionless, the toes and ankles could be moved; the reflexes were normal; the spine was rigid and somewhat bent; there were no symptoms of rhachitis. The child was put at once on Pasteurized milk, and received the juice of an orange and two teaspoonfuls of raw beef-juice daily. No drugs were administered. The little sufferer began to gain at once; the symptoms disappeared one after the other; and in two weeks the spine was flexible and straight, and the legs were moved freely. The recovery was permanent. The parents reported that another child of a neighbor, thirteen months old, fed upon the same diet, developed painful swelling of the joints, spongy and bleeding gums, and died of exhaustion.

The pseudo-paralysis is one of the most striking of the lower limb symptoms in these cases; the trunk and upper extremities may also be affected. All observers have noted such symptoms. This is due to local hemorrhagic lesions, but essential paralysis cannot be assumed. This may be due to the blood and serous infiltration into and between the muscles. Contraction of the muscles on their tender periosteal attachments would be instinctively avoided. joint irritation exists there would be local reflex muscular rigidity, which would also operate to prevent motion. This pseudo-paralysis is distinct from other paralytic affections, being distinguished by the accompanying symptoms of scorbutus, normal knee-jerks, and by its speedy subsidence on anti-scorbutic diet.

Dr. Louis Starr, of Philadelphia, said that Dr. Northrup's paper on "Scorbutus in Infancy," read before the American Pediatric Society in September, 1892, was the first attempt by an American to establish the distinct position of that disease, and to explain its origin and treatment. Before this paper appeared, he had seen four cases, one of which died. The autopsy findings corresponded exactly with those observed by Dr. Northrup. Since that time he had seen nine cases. In few diseases were the various symptoms so cases were as follows:

(1) Immobility, excessive tenderness, and a varying found in treatment. degree of swelling of the lower limbs. The swelling Dr. A. D. Blacks

the skin being tense and often fivid in color, but not pitting on pressure.

(2) A purplish discoloration of the gums, which were also often spongy, swollen, and bled readily. These features were entirely absent when no teeth had been cut, and when but few teeth had appeared, were absolutely limited to the gums surrounding them. There had been complete and rapid recovery under anti-scorbutic treatment.

Each of these cases occurred in the best surroundings, and was traced to improper feeding, usually some buby food. Three cases were apparently due to alterations produced in ill combined milk mixtures by sterilization. The symptoms subsided upon stopping the sterilization, without otherwise changing the food. A typical case was reported in a child of eight months, in which the symptoms consisted of spongy and bleeding gums, pain in and immobility of the legs, and some swelling in the knee- and ankle-joints. Recovery followed regulation of the diet with the administration of a teaspoonful of orange-juice and the same quantity of raw beef-juice three times a day. This was ordinarily the treatment used in all cases. Olive oil rubbed into the limbs brought some relief to the tenderness and assisted the nutrition. Some preparations of iron were administered in some cases.

Dr. T. M. Rotch, of Boston, wrote that the first really good work done in this country on scorbutus was by Dr. Northrup, and the credit should be awarded to him. He reported thirty cases of scurvy. In some of his cases scurvy seemed to have been superadded to an original rhachitis. The scurvy rapidly recovered, while the rhachitis took the usual slow course. He doubted if there was such a thing as acute rhachitis, and said that in his experience scorbutus was most commonly met with in the last quarter of the first year.

Dr. F. Forchheimer, of Cincinnati, wrote, in answer to questions, as follows:

(1) Diagnosis rests upon the hemorrhagic nature of the symptoms. I believe all the forms classed under the head of purpura, peliosis, and scorbutus to be the same, that is, scurvy.

(2) Hemorrhages that are diagnostic occur under the skiu and in the mucous membranes.

(3) Hemorrhages that occur under the skin, and the peculiar condition of the mouth, may exist together or alone. It is difficult to estimate properly the value of the mouth symptoms in cases where there are no teeth. When teeth are present, it may be mistaken for ulcerative stomaticis; but therapeutic experiment will decide the question in a very short time.

(4) Diagnosis rests upon the following symptoms: Pain in the joints of the extremities, spots in the skin,

and condition of the mouth.

(5) I believe scurvy to be a collection of symptoms, the cause or causes of which are unknown. It seems from present knowledge to be some chemical change, probably hæmic.

(6) The symptoms disappear very rapidly under treatment. The joint symptoms begin to improve in a few days; then the mouth, then the spots, lastly, the

(7) The most successful treatment has been orangeconstant in their grouping. The conditions in these juice, lemon-juice, and good milk. I cannot refrain from laying stress upon the aid to diagnosis which is

Dr. A. D. Blackader, of Montreal, said he had seen was most marked in the neighborhood of the joints, no cases of scorbutus in this country, and inquiry among prominent men of large medical experience in Montreal showed that they had either not seen scorbutus or had failed to recognize it.

Dr. F. Lockwood, of Baltimore, had seen no case since the one which was reported in Dr. Northrup's paper in 1891. He said his dispensary cases were nearly all colored. Rhachitis was common. They did not receive artificial foods but ate whatever the table afforded.

Dr. W. D. Booker, of Baltimore, wrote that he had been on the lookout for scorbutus in infants since the publication of Dr. Northrup's paper, but had not seen a case.

Dr. J. Lewis Smith said that although rhachitis was common in dispensary practice, scurvy was very rare. As he had seen it, the symptoms had been those already described. The gums were not affected before the teeth were present. Anæmia was almost constantly present and a condition of failing health usually preceded that of actual scurvy. In older children he had noticed a peculiar state of mental depression. Death usually resulted from prostration.

Dr. A. Jacobi said that he had recognized scurvy before Dr. Northrup's paper appeared, but he now believed that he had overlooked many cases. former years he had frequently made a diagnosis of acute rhachitis. Most of such cases were undoubtedly scorbutus. They were not infrequent. He had seen them most frequently in winter. They developed almost exclusively among well-to-do-people, among children who are artificially fed. A long-continued and exclusive diet of sterilized milk might probably cause the disease. The gums, in his opinion, did not furnish an absolute evidence of scorbutus, although they were, as a rule, affected. He had seen a marked case with teeth in which the gums were not spongy, and another child of six months with no teeth with spongy and bleeding gums.

Scorbutus is, without question, a disease by itself. It has been diagnosticated as acute rhachitis, as rheumatism, as trauma when a single joint is affected, and as ulcerative atomatitis. In treatment, dietetic management is most important. Fruit-juice is a valuable agent, and should be given. Animal food should also be given, but milk is the most important element. It should rarely be given alone, but in connection with one of the cereals. He usually dilutes it with barley water. Phosphorus is an excellent addition to the treatment, especially when rhachitis is present. The official elixir should be given in doses of ten to fifteen minims three times a day.

Dr. L. Emmett Holt bad investigated thoroughly the effect of sterilized milk in producing scurvy. In three great institutions, the New York Infant Asylum, Nursery and Child's Hospital, and Babies' Hospital, but one case of scurvy has developed for five years. This case had a diet of malted milk. Most of the children were fed exclusively on sterilized milk. Sterilized milk is too valuable a food to be thoughtlessly set aside because one or two cases out of the many thousands who have taken it developed scurvy. As to the season, he has seen more cases in summer. As a rule, malnutrition precedes the attack, but he has seen one patient who was taking Mellin's food rapidly develop a severe attack in the most perfect health.

As to diagnosis, one case had been considered saring, if it would only clear off this crowded sphere. It
come of the knee. The swelling was immense, and
is not stated whether the gentleman himself is one of
the child died. One had been treated for acute osteithe two million extras or of the desirable inhabitants.

tis of the knee, a plaster splint having been worn for some time. Three had been considered rheumatism, and one infantile paralysis. He had studied the effect of Mellin's food in six recent cases of scurvy. One child had taken five ounces a day for eight months; another, a bottle every two days for six weeks. With a single exception his cases have all been private ones, and with a single exception all had been from the country. They did not develop in institutions, because, during recent years, the feeding of children in institutions had been rational, far better, in fact, than that of the ordinary child outside. Scurvy is a dietetic disease, and must be cured by diet. A simple change of diet produces rapid and often brilliant cure.

Dr. W. L. Carr said that scurvy is rare in dispensary and hospital practice. In his cases diarrhee had usually preceded the development of the disease. In one patient, nine months old, lacto-preparata had been the food. The case had been mistaken for one of rheumatism. The case was markedly rhachitic; the upper and lower extremities had both been involved, but improvement was first noticed in the arms. The swelling was most common over the upper third of the thigh.

Dr. F. M. Crandall reported a case which had been fed on Nestle's food, Mellin's food, and for six weeks almost exclusively on prepared barley. Spongy and bleeding gums, swelling of the right knee, and great pain when moved or handled were the prominent symptoms. The use of orange-juice, with a diet of modified milk and beef-juice was followed by rapid and complete recovery.

Dr. J. H. Fruitnight reported five cases, four of them ranging in age from eleven to twenty months. All were in private practice and artificially fed.

Dr. Max Einhorn, from recent laboratory experiments, believed that the disease might be due to a certain chemical change in the blood

Dr. Joseph E. Winters said that the worst case he had seen was fed exclusively on an infant food. Recovery on a milk diet alone had been rapid and complete. He uses sterilized milk, and does not believe that complete sterilization, if not carried beyond twenty minutes, will produce scurvy.

Dr. Northup said that the chief object of the meeting was to bring out varied experiences, and to secure data which would establish the condition as a distinct disease of childhood. It was clearly proved that it developed almost exclusively among private patients, and in an overwhelming proportion of cases among those fed on a proprietary food. No one food was an especial offender, except as it was especially advertised and largely used. The most popular food would show the greatest number of cases of scurvy. If it were popular enough, it would obtain a monopoly on the disease. The pictures of the blooming infants reared on these foods were attractive, but the proprietors failed to publish pictures of the scurvy cases.

Two Million Prople too Many. — Rev. Dr. Paxton, of New York, is reported to have said that there were two million more people on the earth than there is room for, or need of. Having thus calculated the excess, he states that the only remedy is war or plague — either of which he thinks would be a blessing, if it would only clear off this crowded sphere. It is not stated whether the gentleman himself is one of the two million extras or of the desirable inhabitants.

Reports of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

NINTH ANNUAL MEETING, WASHINGTON, D. C., MAY 29, 30, 31 AND JUNE 1, 1894.

(Concluded from Vol. cxxx, No. 26, p. 650.)

THIRD DAY. - THURSDAY.

DR. J. P. CROZER GRIFFITH, of Philadelphia, read a paper upon

TETANY IN AMERICA.

Dr. Griffith reported five cases of tetany of varying types, some of them continuous, approaching or including the carpo-pedal spasms of some authors; some of them paroxysmal in nature. The cases show that those authors are probably correct who include all these forms under one general heading, "Tetany." All gradations seem to exist between the mildest and the severest cases. Certainly, with our present knowledge, we are unable to make any sharp distinctions.

He then followed with a review of the cases of tetany which have been reported in America. The history of these cases seems to uphold the views stated.

DR. W. G. THOMPSON exhibited the photograph of a case of tetany, which he saw a year ago in a man about thirty-five years of age. The disease lasted be determined in regard to its probable cause. spasms were very general, affecting all the muscles of the body, and they included those of the face in a very marked degree, as was shown by the photograph.

Dr. E. G. Janeway reported two cases of tetany, which he had seen in connection with typhoid fever. The first case was a lady of about thirty years of age, who had a very severe attack of typhoid fever. During the mid-period of the disease, tetany came on in the muscles of the arms and legs, some of those of the back, and also those in the jaws, making the matter of feeding a subject of extreme difficulty. The tetanic a paper entitled condition lasted about two weeks, but was severe for only ten days. It made a complication of extreme gravity, and suggested to some who saw her the possibility of meningitis from the stiffness of the back and neck. The stiffness of the arms and hands gave the clue to tetany, and relieved the anxiety of the physicians.

DR. A. JACOBI, of New York, asked Dr. Griffith if he had said that laryngismus stridulus must be a very rare symptom in America because there were so few

DR. GRIFFITH: Because of the few reports, and because I and others with whom I have talked rarely meet with it.

Dr. JACOBI said that it was his experience and that of a number of physicians with whose practice he was acquainted, both dispensary and other practice, that that there were so few reports because it was such a common disease. In the course of every winter he mus stridulus.

DR. C. G. STOCKTON, of Buffalo, reported a case of tetany in a child four years old. The child was under was almost complete suppression of urine. The child neuritis. There is good reason to believe, however,

had general cedema, and it was supposed that it had a cystic kidney. The child now, two and one-half years later, is practically restored to health, and the kidney disturbance must have been a functional one.

DR. J. J. PUTNAM said that tetany was a rare disease in America. At the Massachusetts Hospital, some 1,200 cases of nervous diseases were treated annually; and yet he could recall only two typical cases in adults, and a few instances of the carpo-pedal contractions in infants.

DR. WM. OSLER spoke of a case of tetany occurring in pregnancy, and recurring on six successive occa-The tetany came on about the sixth month.

Dr. James Stuart, of Montreal, said there appeared to be a tendency among the speakers to classify all cases of tonic spasm, not attended by loss of consciousness, as cases of tetany. The genuine tetany described by Trousseau and Weiss is certainly a distinct affection from the majority of cases which had been described by those who had spoken. The tetany which is frequently epidemic in Vienna and in some parts of France is an entirely distinct affection from carpo-pedal contraction. The word tetany as used at present embraces a vast majority of different troubles, and is something like "chorea," which is a general

term to signify a great number of different spasms.

Dr. J. P. C. GRIFFITH said that the experience of Philadelphia physicians in regard to the frequency of about six weeks, and there was absolutely nothing to laryngismus stridulus was contrary to that of Dr. Jacobi. He had talked with members of the American Pediatrical Society, and they had said that they saw few cases of it.

> I)r. Stewart's view of tetany was the one which he held when he commenced his paper; but the more he looked into it, the more impossible he found it to make a sharp distinction between one and the other varieties. After all, perhaps tetany is a condition and not a disease — a symptom, a certain expression of the nervous system, like eclampsia, for instauce.

> DR. WHARTON SINKLER, of Philadelphia, then read

LEAD PALSY IN CHILDREN; WITH A REPORT OF THREE CASES.

Lead palsy in children, he says, is a rare disease, although there is no apparent reason why children should not be affected as readily as adults. But few cases of this kind can be found in literature. symptoms dependent upon disease of the nervous system due to lead poisoning, are motor and sensory. The most common of these is paralysis of the extensor muscles of the forearm. In children, however, it is a noteworthy fact that the paralysis is more liable to affect the lower extremities than the upper. There are but two cases reported in which sensory disturbances have been met with in children. Lead palsy in children very closely resembles poliomyelitis anterior, and laryngismus stridulus was quite frequent. He thought is probably often mistaken for this disease; and this may account for the small number of cases of lead palsy in children which have been recorded. Dr. saw, at least, a dozen cases of well-marked laryngis-| Sinkler reported three children in one family suffering from this affection, the disease being traceable to white-lead for painting, which was kept in the house. The pathology of lead-poisoning in children is generhis care because it was passing a very small amount of ally considered as consisting in changes in the peripheurine, and developed carpo-pedal spasm which contin- ral nerves; and these changes are very closely allied ued almost steadily for two months. At times, there to those met with in the ordinary form of multiple

that in many cases of lead paralysis, the symptoms are due primarily to the direct action of the lead upon the muscles. It is also probable that chronic lead-poisoning may produce typical changes in the anterior horns of the spinal cord, and thus give rise to a poliomyelitis.

DR. J. J. PUTNAM said that Dr. Sinkler's cases confirmed very strikingly the interesting fact that in children the legs are affected quite as early as the arms, and at times earlier. He referred to the experimental researches of Dr. Stieglitz, of New York, on lead paralysis in dogs, produced by continuously giving small quantities of lead. He found distinct focal changes in the spinal cord, foci of degeneration in different parts of the cord, and as much in the lumbar region as in the cervical region.

Dr. A. Jacobi spoke of two cases of lead paralysis in children in which the arms and feet and legs were equally affected. One was that of a boy who ate the paint from his father's feuce; and another was a baby which had been treated for extensive eczema of the face and head with lead ointment, and would put his fingers in his mouth after picking his cheek.

DR. M. ALLEN STARR related two cases of lead palsy in children which he had watched in St. Mary's Hospital. They were sister and brother, the children of a painter. The paralysis began in the feet, and later extended to the hands, the reverse of the ordinary lead paralysis. The little girl died, and an autopsy was obtained. The spinal cord was carefully examined, and found normal. The peripheral nerves were all affected in the distal portion of the extremities. The main trunks of the nerves, the sciatic and the brachial plexes, were apparently normal. The degenerative changes in the peripheral nerves were very well marked.

Dr. J. H. Musser, of Philadelphia, read a paper on THE MILD CHARACTER AND DIMINISHED PREVALENCE

OF SYPHILIS AND THE INFREQUENCY OF VISCERAL

The paper attempted to prove, first, that syphilis of the present day is of mild type and is infrequent compared to a period of twenty years ago. Is it (1) because the community is becoming immune, (2) because the virus is less active, or (3) because of the change in the habits of cleanliness of the public? Second, the infrequency of visceral syphilis is considered. Syphilitic disease of the lungs, liver and kidneys is extremely rare. Are we warranted in the belief, therefore, that this infection is the cause of so-called nervous syphilis or of nervous diseases due to syphilis?

Dr. E. G. Janeway thought it would be a mistake if we should overlook syphilis as a factor in the production of disease. He believed that syphilis was a strong factor in the development of locomotor ataxia and still stronger in general paresis. Quite a number of general practitioners fail to take syphilis into consideration as a producer of internal disease. It is not so very infrequently that syphilis is present when it is not thought to exist and it occasions symptoms which simulate phthisis. He related four cases of this character where the patient failed to improve at health resorts but improved in the City of New York upon anti-syphilitic treatment. Syphilis undoubtedly stands very strongly as an etiological factor in the development of aneurisms.

Dr. H. M. LYMAN said that his own investigations with regard to the prevalence and severity of syphilis cerebral hemorrhage and acute softenings upon

at the present time were quite in accord with those expressed by the paper. In the Sandwich Islands and other islands of the Pacific where syphilis was introduced during the last century, and where its ravages were of the most terrible character, the syphilitic manifestations are different at the present time from what they formerly were, and the disease has assumed a very much milder and more tractable form. Where a population is becoming more stable in its constitution and more civilized in its character, the virulence of syphilis is diminishing. The tendency of syphilis is to diminution in the virulence of its primary and secondary manifestations; yet the later manifestations of the disease, such as tabes and paretic dementia, which are most closely related to syphilis, if not an actual manifestation of late forms of syphilis, are exceedingly apparent.

Dr. I. E. ATKINSON said that from an observation of only thirty years it could hardly be accepted that syphilis is declining. All will admit that it is not so severe a disease as it was when it first became prevalent at the end of the fifteenth century, but there are so many circumstances that may interfere with statistics based upon the records of a single hospital, that we must be careful in drawing conclusions from them. So far from looking upon syphilis as a disease that tends to become insignificant in a small space of time, he is still in the habit of seeing in the hospital wards grave syphilitic disease and patients with grave nervous and visceral disease due to this infection. The claim that syphilis is a disease that is becoming milder within the observation of the present generation should be taken with a considerable degree of allowance.

Dr. Abner Post, of Boston, said that he had been attracted by the title of the paper because it indicated an experience which was entirely foreign to his own. He constantly saw more and more syphilis, and graver and graver cases. Possibly his position as a teacher of syphilis directs such cases to him. Possibly if the statistics of the whole city of Philadelphia could be taken into consideration, it would be found that cases of primary syphilis had disappeared from one hospital and had increased in numbers at others. He had heard cases of diphtheria divided into three classes: first, those in which the cases were so mild that under any treatment or no treatment they would get well; a second class in which the cases were fatal from the very beginning; and the third or largest class which was severe but in which treatment showed itself of value. It occurred to him that syphilis might be divided in somewhat the same way. He thought that it would be possible for any one to see a long list of cases of the first character in which syphilis was mild, and the physician might form his opinion that this disease was an extremely mild one. For a long series of years he saw such a class of cases, but latterly he had been in the way of seeing the cases that had gone to the bad in spite of treatment. It seems impossible that syphilis should be dying out in this country considering the way we cultivate the disease. In his own locality there is absolutely no control exercised.

A STUDY OF THE TEMPERATURE IN CEREBRAL APOPLEXY.

In this paper Dr. C. L. DANA discussed the effect of

(1) The general bodily temperature.

(2) In causing unilateral rise.

(3) The comparative effect of the two processes in causing temperature disturbance.

(4) The question of the localization of lesion in reference to temperature.

He endeavored to show that hemorrhages cause elevation of temperature, and more on the affected side. That softenings do not cause any elevation; that all apoplectic temperatures are low and have no diurnal variations; that temperatures above 103° are evidence of complications (pneumonia); that lesions of the thalamus may cause a high temperature; that a close study of temperature helps greatly in diagnosis and prognosis of the apoplexy.

DR. J. J. PUTNAM expressed his appreciation of Dr. Dana's valuable contribution, and spoke of one case of his own where there was undoubted hemorrhage and in which the temperature went up much higher on the affected side than on the opposite side.

DR. F. C, SHATTUCK read a paper entitled

SOME REMARKS ON THE SIGNIFICANCE OF ALBUMIN AND CASTS, ESPECIALLY IN THOSE PAST MIDDLE LIFE.¹

DR. I. N. DANFORTH, of Chicago, said that his own observations had closely followed those of Dr. Shattuck for several years past. Twenty years ago a patient came to him who had albuminuria and casts. He told him that he had Bright's disease, and had not long to live, and that he had better make arrangements for a change of worlds. That man is still alive and as well as he was then, and attending to his vocation. Dr. Danforth has come to regard transitory albuminuria of slight amount as a small matter, and the presence of casts — provided they are small, symmetrical, hyaline casts — as not necessarily involving any special danger. He insists, however, that the character of the casts determines the real condition of the kidney, and that a study of the structure of the casts requires a great deal more observation.

DR. T. M. PRUDDEN read a paper on

EXPERIMENTAL PHTHISIS IN RABBITS, WITH THE FORMATION OF CAVITIES: A DEMONSTRATION.

Attention has for some time been turned to the concurrent infection of the lungs in pulmonary tuberculosis with other germs, such as the streptococcus pyogenes, micrococcus lanceolatus, staphylococcus pyogenes, and so forth. Sufficient data are at hand to justify the conviction that this secondary infection often plays an important rôle in determining the symptoms and lesions of pulmonary tuberculosis. As a part of a series of studies on this subject, the author undertook to find out, among other things, the effects in rabbits — already the subjects of an extensive experimental pulmonary tuberculosis — of intra-pulmonary injections, through the trachea, of beef-tea cultures of the streptococcus pyogenes.

The streptococcus pyogenes alone introduced through the trachea into the lungs of healthy rabbits usually induces a slight, temporary, localized bronchitis and a moderate proliferation of vesicular epithelium. These small inflammatory foci usually soon disappear without serious interference with the health of the animal. The tubercle bacillus alone, introduced in considerable quantity, through the trachea of healthy rabbits, is

1 See p. 613 (Vol. exxx) of the Journal.

capable of causing large areas of tubercular consolidation of the lungs, with varying amounts of cheesy degeneration. This experimental lesion of the rabbit's lung, caused by the tubercle bacillus alone, is closely similar to certain phases of cheesy pneumonia or acute phthisis, as we see it in man, save that in the animal lesion, cavities are not apt to form. Having established the separate effects upon the rabbit's lung of the streptococcus and of the tubercle bacillus, Dr. Prudden introduced the streptococcus into the lungs already the seat of extensive tubercular lesions. The result of this secondary concurrent infection was not, as had been deemed possible or probable, an increased amount of exudative pneumonia, nor a hastening of the death of the animals, but a more or less extensive formation of cavities in the affected portions of the lungs. This formation of cavities occurred in eight out of nine lungs subjected to the conditions of this experiment, whereas in only one lung out of eleven did cavities form under the influence of the tubercle bacillus alone.

Dr. Prudden's demonstration consisted in the exhibition of photographs of the lungs of these rabbits, both with the simple and the mixed infection, and of some of the lungs themselves. These specimens show conclusively that pulmonary phthisis — cavities and all — can be experimentally induced in the lower animals.

Dr. G. L. TRUDEAU read

A REPORT OF THE ULTIMATE RESULTS OBTAINED IN EXPERIMENTAL BYE TUBERCULOSIS BY TUBER-CULIN TREATMENT AND ANTI-TUBERCULAR INOCULATION.

In the great majority of cases, the tubercular process which has been apparently cured in the rabbit's eye by tuberculin treatment, slowly relapses. This tendency to relapse may show itself as soon as the injections are no longer capable of producing reaction in the eye, or an apparent cure having taken place. The process may remain arrested and the eyes well for months before the tendency to relapse manifests itself. The inhibitory influence exercised by the treatment on the more chronic forms of this type of tuberculosis seems demonstrated, though in most cases only temporary.

Protective inoculation, by means of graded doses of living avian bacilli, gives results more satisfactory, and which seem more permanent. Relapses, it is true, do occur in a fair majority of cases, but, even in these, the inhibitory influence of the preventive treatment is manifest. In some, the disease runs a chronic course, and, even when the eyes are ultimately entirely destroyed, this does not occur until many months after it has taken place in the controls. In other of the relapsing cases, the inhibitory influence of the preventive inoculation is frequently so marked, that the disease progresses almost imperceptibly, and is characterized by long periods of complete arrest. In a fair proportion of animals, however, the eyes recover completely from the tubercular inoculation, and the degree of persistence of this apparent immunity is shown by the fact that inoculation six months later in the sound eye may follow the same typical course as in the first instance, and the second eye, also, be completely restored.

Though dangerous to the animal's life, and uncertain in its protective effects, a study of anti-tubercular inoculation indicates that the reaction of living tissues

to tubercular inoculation can be modified artificially, and thus the production of a relative, and in a few cases an apparently complete, artificial immunity is a possibility.

Photographs illustrating these points, and taken a year after the virulent inoculation, accompanied the ings of the patient; hepatic and renal elimination;

Dr. NORMAN BRIDGE, Los Angeles, Cal., read a paper on

COUGH INDUCED BY POSTURE, AS A SYMPTOM NEARLY DIAGNOSTIC OF PHTHISIS.

Probably in more than nine-tenths of all cases of pulmonary tuberculosis, and of other diseases similarly localized and inducing fluid products, at some time in the course of them, cough is to some degree, slight or extreme, produced or aggravated by posture of the diseased side, when maintained from a few minutes to an hour. Cough is rarely so produced in any other disease whatsoever. In phthisis, especially early in the cases, the cough is increased or produced by recumbency on the side affected, provided the side is only moderately involved, and the lesion is somewhat circumscribed in character. If the disease involves the whole of the lung, the patient often coughs less when he lies on that side. The symptom under consideration is doubtless produced by the flow of mucopus into healthy brouchial tubes of lessening diameter, and the force of gravity produces this in most cases where the secretions are fluid and where the patient lies for any length of time on the affected side. cumbency on the opposite side favors the flow of the secretions toward larger and larger tubes, where the mucous surfaces are less sensitive and more accustomed to such irritations, and so cough is not provoked till relatively large masses of phlegm have accumulated. This symptom of cough induced by posture has a large measure of diagnostic value; and in cases that cannot be examined physically, it will be found a consideration of first importance in helping to determine the presence of tuberculosis and the location of it.

FOURTH DAY. - FRIDAY.

Dr. Victor C. Vaughan, of Ann Arbor, read a paper entitled

THE CHRMICAL PRODUCTS OF THE ANÆROBIC PUTRE-FACTION OF PANCREATIC AND HEPATIC TISSUES. AND THEIR EFFECTS UPON THE TESTS FOR MOR-PHINK.

The chemical products of putrefaction are modified by the conditions under which the process proceeds. There are always present, during life, in the upper part of the small intestines, certain anærobic germs which produce indol and its derivatives. When the host dies, these germs do not necessarily cease to exist. They can grow, multiply and produce their special products only in the absence of air. Pancreatic and hepatic tissues allowed to decompose in the absence of air, contain chemical substances which can be extracted by the methods of Dragendorff, and which give many tests similar to those given by morphine.

Dr. H. M. LYMAN read a paper on

GASTRO-ENTERIC RHEUMATISM.

Characterized by symptoms as definite as those of

thritic, senile, or prematurely aged people. It belongs to the erratic and neuralgic variety of rheumatism. Its pathology is as indefinite as that of chronic neuromuscular rheumatism in general. The treatment consists in providing warmth and dryness of the surroundnutritious and easily-digested food; warm baths and abundant exercise.

Dr. J. H. Musser questioned the propriety of the term "gastro-enteric rheumatism." He thought the use of new terms should as far as possible be depre-The disorder is not a local affection of the stomach alone, but part of a general morbid process in the gouty subject, and the term which indicates this general process should continue to be used.

DR. J. E. GRAHAM, of Toronto, thought that the term "rheumatism" should be limited to the acute inpatient, and especially by the horizontal posture on the fectious process which we call acute rheumatism, and should not be applied to the class of cases described by

Dr. Lyman.

DR. VICTOR C. VAUGHAN said we used the word "rheumatism" to cover a great variety of things, and that doubtless many pains in the stomach and intestines, differing in origin, would come under Dr. Lyman's description. He thought a distinction should be made between the pains caused by a uric-acid condition and those caused by something else. This distinction could be made by an examination of the blood and the determination of the polynuclear cells in the blood.

We were formerly taught that uric acid is a product of imperfect oxidation, and if the oxidation went on more completely urea would be formed. With the light now before us, we can say that urea and uric acid are in no way concerned one with the other; that uric acid is not a product of imperfect oxidation, the complete product of which would be urea.

Dr. I. T. Dana, of Portland, said that the term "rheumatism" represents at present a conglomerate pathological mass, but the time will come, perhaps shortly, when this term will be applied only to the ordinary form of articular rheumatism attended with a liability to implication of the heart, and the terms rheumatic neuralgia, rheumatic dyspepsia, etc., will pass away. We would gain a good deal if we would limit the use of the term "rheumatism" to the articular inflammations, and give to the other forms of disease which are now often grouped under the head of "rheumatism," individual and new names.

Dr. LYMAN said he was quite in accord with the remarks of Dr. Dana regarding the complexity of the diseases known as "rheumatism," and in writing his paper he was bothered to know what title to assign to He simply wished in his paper to call attention to the clinical aspects of a complexus of symptoms which are as clearly defined as articular rheumatism or any of the polymorphous disorders now readily classed under the term "rheumatism."

Dr. George Dock, of Ann Arbor, read a paper on

A CASE OF OSTEOMALACIA.

He reported the case of a woman aged twenty-five years, a native and resident of Michigan, who had a marked case of osteomalacia. The case was probably, though not distinctly, of puerperal origin. The case lasted three or four years, with marked symptoms for two and a half years, and was characterized by the articular rheumatism, it occurs among neurotic, ar-|common subjective symptoms and softening, spontaneous fracture, and deformity of the bones, and excretion by the kidneys of large quantities of lime salts (renal colic). Treatment had no influence on the disease (lime, phosphates, etc.).

The post-mortem changes were very marked, and did not throw any light on the pathology of the disease (microscopic and histological specimens were

shown).

He referred briefly to all the cases hitherto reported in the United States, which, excluding three of doubtful diagnosis, are very few, and do not add materially to our knowledge of the disease.

The following papers were read by title: "Stomatitis Neurotica," by A Jacobi; "A Case of Mitral Stenosis, with great Hypertrophy of the Right Ventricle: Death from Hæmoptysis," by A. McPhedran; "A Case of Calculous Pyelitis, with Invasion by the Bacillus Lactis Ærogenes," by J. H. Musser.

PRESIDENT FITZ called the attention of the Association to the fact that seventy per cent. of the members had been present, making this the best attended

meeting in the history of the organization.

The election of officers resulted as follows: President, Wm. Osler; Vice-President, A. Jacobi; Recorder, I. Minis Hays; Treasurer, W. W. Johnston; Secretary, H. Hun; Member of Council, J. E. Graham.

The following new members were elected: H. M. Biggs, New York; E. G. Cutler, Boston; F. H. Williams, Boston; M. H. Fussell, Philadelphia; G. Adami. Montreal; B. K. Rachford, Cincinnati.

The Association then adjourned.

Recent Literature.

Burdett's Hospital and Charities Annual, 1894. Edited by HENRY C. BURDETT, author of "Hospitals and Asylums of the World," etc. London: The Scientific Press (Limited). New York: C. Scribner's Sons.

This excellent annual gains in size and in completeness each year as it comes to us. It deserves length of life and usefulness in proportion to the zeal and labor expended upon it by its projector. The information it gives is naturally more detailed and thorough for the institutions with which it deals in Great Britain and Ireland.

The American section occupies thirty-eight of the five hundred and twenty-two pages; these pages are divided between sub-sections on hospitals, hospitals for the insane, and nurse training-schools. Among the Boston charities, it seems to us that the Lying-in Hospital and the Children's Hospital are sufficiently important, exemplary and active institutions to merit a little fuller notice than is given of them.

The Myology of the Pigeon. By CHARLES M. BURK, M.D., Instructor in Zoölogy in the University of Pennsylvania. Philadelphia. 1893.

This is a short account of the muscles of the pigeon for students of zoology. It is simple and well fitted for its purpose. There are several illustrations. It is well printed.

ACCORDING to the testimony of one of the witnesses before the Lexow Committee, there are about ten thousand opium smokers in New York.

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AN INTERNATIONAL MEDICAL LANGUAGE.

THE International Medical Congress has now become one of the established institutions of our modern civilization. The advantages accruing to medicine and surgery from these yearly meetings of representative physicians from all parts of the civilized world are so great that the Congress will be continued despite the inconveniences attending the presentation of papers, and the consequent discussion in three or four different languages.

These disadvantages were especially felt at the last Medical Congress held in Rome, where French, German, English and Italian were official. Representatives from all those nationalities and from America were allowed to speak in their own language; but the embarrassment and discomfiture can easily be conceived of those who knew only one language, and especially of the unfortunate reader of a paper in English who could not understand a word of the criticisms offered by the French, German or Italian members of the Congress. It was a Babel of tongues, the Italian naturally being the language most used, a language of which not one in ten of the visitors from abroad knew a word.

The desirability of an international medical language is obvious, but what language shall be selected? The time was when Latin was the universal language of medicine and of science: and a hundred years ago the difficulty would easily have been settled in favor of the linguistic medium in which Cicero and Virgil wrote. But alas! Latin is not now taught as it was a hundred years ago, for the reason that in the education of our youths it has been superseded by other modern studies deemed of more importance; nor will the so-called dead languages ever again occupy at the universities three-fourths of the time of undergraduates between the ages of sixteen and twenty-one. Moreover, Latin is not sufficiently wieldy and flexible a tongue for verbal use, and its vocabulary would be

life.

Much more might be said in favor of Greek. It is not a dead language, but "living, flexible, and perfectly adapted to all the needs of human intercourse." It is a language easily acquired; as easily, according to Dr. Rose, as French or Spanish, and certainly much more easily than German. "The literary Greek of to day," says this writer, "is identical with the Attic dialect in orthography, almost also in form; there is, in fact, more difference between the Greek of Herodotus and the Greek of Zenophon than there is between the Greek of the latter and the Greek of to-day."

Dr. Rose makes an earnest plea for the restoration of Greek to the important place which it once occupied in the curriculum of studies at universities, but he insists that Greek should be taught not as a dead, but as a living, language, by professors competent to teach it as it is spoken and written in Attica to-day; a person so instructed will easily have the Greek of Zenophon and Plato at his command. He believes that the introduction of the living Greek into our schools "would be of no less significance than the work of the humanists at the end of the Middle Ages," and longs to see the day "when the Greek language shall became the property of all scholars of all civilized nations, in such a manner that it shall serve as their medium of intercourse.'

All this is, doubtless, an iridescent Utopian dream. The consent of the faculties of our leading medical schools to make a knowledge of colloquial Greek essential to matriculation can never be obtained, nor will more than a very small modicum of our medical graduates ever take the time to go to Greece in order to learn the language as it is spoken and written to-day. Greece is too far away, and this insignificant nation is still too little in touch with modern thought and modern learning; has too little in which to interest medical men who go abroad for their improvement, and who naturally prefer spending a year at Vienna and Berlin, with the splendid hospital advantages and the opportunities to learn German, to spending a year or more at Athens studying modern Greek literature and the classics.

We opine, therefore, that in the near future when the absolute necessity of some common international language shall come to be recognized, it will not be modern Greek that will be adopted, but perhaps either English or German - more probably English, which is becoming more and more the leading language of the civilized world.

SUICIDE IN THE PRUSSIAN ARMY.

THE natural and general increase of suicide accompanying advancing civilization has been frequently noted. In Prussia, between the years 1871 and 1875, 1.2 persons out of every 10,000 committed suicide; while in 1891 the proportion rose to 2.1. In this respect Germany is ahead of all European States, show-

¹ Medical Record, April 24, 1894, page 392.

found poor in the technical terms of our everyday ing the last two years a ratio of 2.71 to each 10,000 inhabitants. Denmark has 2.58; Switzerland, 2.30; Spain, 0.35. It is not a little surprising that so impulsive and passionate a people as the Spanish should be so little given to suicide, when they are so ready to do violence to others. In Germany, the highest ratio is found in Saxony and its dependencies; the percentage is larger among Protestants than Catholics, and least among the Jews. Contrary to what might be expected, there are fewer suicides in winter than in summer, June having annually the largest number.

> The Austrian and German armies suffer the most in this respect. Between 1876 and 1890, the Fourth Army Corps lost 9.13 men per thousand from suicide; and the lowest rate which was found, in the Seventeenth Corps, was as high as 2.27 per thousand.

> The same territorial and mensual conditions influence the military suicide as the civil. The largest number of suicides of under-officers occurs in August; of the one-year recruits, in March and August. There is especial disposition to suicide in regiments stationed in large cities, where the life of the unmarried rank and file favors the tendency to self-destruction. Marriage appears to be a great protection.

> The causes leading to suicide in the army which are especially active, and less often found in civil life, are fear of punishment, injured sense of honor or wounded pride. Junior officers supply by far the larger number; and the first, second and third years of service show a ratio of 3, 1.5 and 1. The reference of suicide in the army to excessive or unjust discipline is not warranted by facts, although the military service brings to bear many influences which are wanting in civil life upon men of the same age, and which would supposedly lessen the rate of suicide. Nevertheless, the appalling number of young men who take their own lives each year suggests that some cause is operative which should be made the subject of serious consideration in estimating the effect of such large standing armies upon the material and moral welfare of a nation.

NOTIFICATION OF INFECTIOUS DISEASES.

THE practice of notification of all infectious diseases to the sanitary authorities is of quite recent date, so far as England is concerned, the laws upon this point bearing date 1889. When the Act was passed, considerable difference of opinion prevailed as to whether such notification should be compulsory. The old notion still survived that people had a prescriptive right to keep any outbreak of infectious disease in their own household a profound secret from their neighbors; that they were entitled to pass the infection along if it suited their purpose to do so; that any notification of the disease by a medical man was tantamount to a breach of confidence; and that the result of insisting on notification would be, that the head of a household. when any of his family were attacked by an infectious disorder, would decline to call in a physician to attend to them.

In commenting further upon this subject, the Local Government Chronicle says, in a recent issue:

"In view of the extent to which these Old World opinions lingered on. Mr. Ritchie was no doubt right, in 1889, when he made his Act an adoptive one. He trusted to the common-sense of the community, and believed that the prejudice against publicity in such a matter as this would in practice soon be overcome. That he was not over-sanguine in this confidence has been abundantly proved by the extent to which his Act has been adopted throughout the country. Successive Annual Reports of the Local Government Board have shown that the area to which it extends has increased so rapidly that the minority, which have not cared to adopt it, has dwindled to the most insignificant proportions. The last published figures, which are those for the 31st of March, 1893, prove that the notification principle was in force in districts with an aggregate population, according to the census of 1891, of 25,112,958 out of a total population of 29,001,018. We know of no case in which an adoptive Act has been adopted to anything approaching this extent. Apathy and negligence might have been expected to prevent a far greater minority of the community than this from adopting any Act, however desirable it might be that it should be adopted unanimously. The question which arises in this case is, whether when the country as a whole has pronounced unmistakably in favor of a measure which has for its object the prevention of the spread of infectious disease, the small majority of districts in which the local authorities bave not as yet realized the necessity of adopting it, should be allowed to remain outside the Act. If the opinion of the majority is to prevail in this as in other legislation, they ought clearly not to be allowed to remain in their present position. On the other hand, it is undoubtedly the case that a law popularly adopted is more popular than a compulsory law. And with all our sympathy with the objects aimed at by the authors of this Bill, we are disposed to think that in the interests of the notification principle, the best course to take is to leave matters as they are. Every year the opponents of the Act find themselves in a smaller and smaller minority. Is it desirable to do anything which can give them a pretext for declaring that they have any grievance of which they can complain?"

MEDICAL NOTES.

THE PLAGUE AT HONG KONG. - The decline in the plague at Hong Kong after the heavy showers a fortnight ago proved to be but temporary, and the disease is now more rampant than before, and has aupeared in several new districts. The death-rate is at present over a hundred each day. More than seventyfive thousand persons have left the city during the last few weeks.

THE MEDICAL FEATURES OF CARNOT'S FUNERAL. - During the progress of the funeral of President

hundred persons taken to various hospitals by the ambulance service. Many were cases of sunstroke owing to the intense heat, and others were the usual minor accidents and prostrations accompanying such great crowds as were then gathered in the streets.

AMERICAN PUBLIC HEALTH ASSOCIATION. - The Twenty-second Annual Meeting of the American Public Health Association will be held at Montreal, Canada, on September 25 to 28, 1894, under the presidency of Dr. E. P. Lachapelle of Montreal.

THE MEDICAL SCHOOL OF COLUMBIA COLLEGE. - It is announced that, beginning with the academic year 1894 to 1895, the work required of students who are candidates for the degree of M.D. will cover four years of study according to the curriculum set forth. This extension of the course does not affect students who have already matriculated and attended a session.

Dr. William T. Lusk given the Degree of LL.D. - At the Commencement Exercises at Yale University last week the degree of Doctor of Laws was conferred upon Dr. William T. Lusk of New York.

Appointment at the Medico-Chirurgical COLLEGE OF PHILADELPHIA. - The following appointments have been made to the Faculty of the Medico-Chirurgical College of Philadelphia. Dr. Isaac Ott, professor of physiology; Dr. William E. Hughes, professor of clinical medicine; Dr. Albert E. Roussel, assistant professor of practice and of clinical medicine; Dr. Charles W. Burr, professor of nervous diseases; Dr. William C. Hollopeter, professor of children's diseases; Dr. Arthur H. Cleveland, professor of laryngology; Dr. Edward B. Gleason, lecturer in otology, and Dr. William Blair Stewart, lecturer in therapeutics.

HONORARY MEMBERS OF THE BERLIN OBSTETRI-CAL AND GYNECOLOGICAL SOCIETY. - Dr. T. Guillard Thomas and Dr. T. A. Emmett, of New York, and Dr. Theophilus Parvin, of Philadelphia, have been chosen honorary members of the Berlin Obstetrical and Gynecological Society.

THE CROONIAN LECTURES. - The Croonian Lectures before the Royal College of Physicians have just been given by Dr. Pavy, F.R.S., upon "A New Departure in Connection with Diabetes."

THE GERMAN COMMISSION ON ANÆSTHESIA. -At the Twenty-third Congress of the German Surgical Association it was voted to continue the general investigation into the statistics of anæsthetics which the Society has been engaged in for the last four years. Reports are desired until the 15th of March, 1895. Consideration of the following points is especially urged: Specification of the time of observation, of the anæsthetic used and the number of times exhibited; reason for administration; apparatus used; duration of unusually prolonged narcosis; amount of material used; the concomitant use of other drugs, as morphia, and the amount; undesirable phenomena or sequelæ.

THE HOLY COAT OF TREVES. - The Bishop of Carnot, in Paris, on July 1st, there were over five Treves has published a book recounting eleven miraculous cures effected during the exposition of the Holy Coat in that city in 1891. As the attendance at Treves was many thousands, the percentage of recoveries is certainly not large. An example of the eleven cases is quoted by the *Medical Record*: A child named Wecker, who, according to a certificate signed by Dr. Koeller, of Berlin, was suffering from intestinal tuberculosis, was taken to Treves and allowed to touch the relic, and was then pronounced cured. Drs. Koeller and Schultze, of Berlin, certify that the boy is now in good health. The bishop holds that the boy could not have been cured by natural means, and that therefore his present condition of health is evidence that a miracle has taken place.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the six days ending at noon, July 3, 1894, there were reported to the Board of Health of Boston, the following numbers of cases of acute infectious disease: diphtheria 21, scarlet fever 24, measles 16, typhoid fever 2.

THE MASSACHUSETTS STATE BOARD OF REGISTRATION OF PHYSICIANS AND SURGEONS.—The Governor has made the following appointments for the first Board of Registration under the new Medical Practice Law: E. J. Forster, of Boston, for seven years; W. P. Bowers, of Clinton, for four years; D. B. Whittier, of Fitchburg, for five years; A. C. Walker, of Greenfield, for one year; S. H. Blodgett, of Cambridge, for three years; C. Edwin Miles, of Boston, for two years; A. L. Chase, of Randolph, for six years. Drs. Forster, Bowers and Walker are members of the Massachusetts Medical Society; Drs. Whittier and Blodgett are members of the Massachusetts Homœopathic Society; and Drs. Miles and Chase, of the Massachusetts Eclectic Society.

THE BOARD OF HEALTH AND TUBERCILOSIS.—
The Board of Health of Boston has issued a small circular on which is reprinted the recommendations of the State Board of Health concerning tuberculosis, with the following endorsement: "The Boston Board of Health heartily endorses and adopts the above circular of advice from the State Board of Health, and earnestly recommends its consideration and use by the physicians and inhabitants of Boston."

RE-ELECTED OVERSEER OF HARVARD UNIVER-SITY. — Dr. Samuel A. Green was re-elected to the Board of Overseers of Harvard University on Commencement. With the exception of the years from 1880 to 1882, Dr. Green has served as Overseer continuously since 1869.

HARVARD MEDICAL SCHOOL. — The graduating class of the Harvard Medical School this year contained one hundred and twenty-seven men, and was the largest class ever graduated.

SMALL-POX IN CONNECTICUT. — Small-pox is prevalent in Litchfield County, Conn., some fifteen cases being at present under quarantine supervision in the three towns of Kent, Alder City and Macedonia.

NEW YORK.

A DEATH FROM HYDROPHOBIA. - A case of death from hydrophobia has occurred at the Pasteur Institute; but the patient was already in a hopeless condition at the time he was admitted. Mr. Walter E. Orcutt, a hotel keeper of Northampton, Mass, was bitten on the wrist by a pet dog on May 23d, and although the wound was very slight, he took the precaution of having it cauterized. It healed perfectly, and he thought no more about the matter until June 28d, when he was seized with alarming symptoms, and was at once brought to the Pasteur Institute in New York. His friends were assured by the physician in charge, Dr. Labadie (Dr. Gibier's assistant), that no treatment would now be of any avail, and he died on June 26th. In this instance, the more violent manifestations of rabies were in a great measure lacking, but the patient rapidly succumbed to paralysis of the nervous centres.

Miscellanp.

THE BACTERIOLOGY OF ECLAMPSIA.

ANOTHER disease or condition may soon be classed bacteriological. At a recent meeting of the Paris Society of Biology, MM. Bar and Renon reported the result of a bacteriological examination of the livers of three women who died of eclampsia. The examinations were made immediately after death. In the first case, fragments of the liver gave colonies of staphylococcus aureus and albus. The autopsy showed, however, a vegetative mitral endocarditis, which was also found infested by staphylococci. In the two other cases cultures from the liver remained sterile, the liver presenting, as in the first case, only the usual lesions of eclampsia. The conclusion drawn from these cases by the gentlemen was, that eclampsia might perhaps be the result of a generalized infection as well as a simple non-microbic toxemia.

THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES.

AT a meeting held in San Francisco, Cal., June 7, 1894, the following resolutions were adopted by the Association:

Resolved, That colleges, members of this Association, shall require of all matriculates an examination as follows:

- (1) An English composition in the handwriting of the applicant of not less than two hundred words; said composition to include construction, punctuation and spelling.
- (2) Arithmetic, Fundamental Rules, Common and Decimal Fractions and Ratio and Proportion.
 - (3) Algebra through Quadratics.
 (4) Physics Elementary Gage.
- (5) Latin An amount equal to one year's study, as indicated in Harkness Latin reader.

[The above resolution does not apply to students exempt from the entrance examination, as per Sec. 2, Art. III.]

Resolved, That the following classes of students be recognized as entitled to apply for advanced standing in colleges members of this body:

(a) Such graduates of recognized colleges and universities as have completed the prescribed courses in Chemistry and Biology therein.

(b) Graduates and matriculates of colleges of Homeopathy.

(c) Graduates and matriculates of colleges of Eclectic medicine.

(d) Graduates and matriculates of colleges of Dentistry requiring two or more courses of lectures before conferring the degree of D.D.S.

(e) Graduates and matriculates of colleges of Pharmacy.

(f) Graduates and matriculates of colleges of Veterinary medicine.

[It is provided, however, that the above class of students be required to comply with the provisions of the entrance examination and to prove their fitness to advanced standing by an individual examination upon each branch below the class he or she may desire to enter.]

Resolved, That students graduating in 1899 or subsequent classes be required to pursue the study of medicine four years and to have attended four annual courses of lectures of not less than six months' duration each.

Correspondence.

[Special Correspondence.]

THE STUDY OF PATHOLOGY IN GERMANY.1

Freiburg in Baden. — Strasburg. — The American and Greman Medical Student. — The American and German Graduate in Medicine. — Clinical Autopsies.

HEIDELBERG, June 3, 1894,

FREIBURG IN BADEN.

MR. EDITOR: — The hospitals and medical buildings at Freiburg in Baden are grouped conveniently together on the northern edge of the town. In one large block, containing tastefully arranged grounds and flower gardens, are the separate buildings of the Anatomical and Pathological Departments. The Pathological Institute is a three-story building of moderate size, which is already proving too small to accommodate the number of students in attendance. The upper story is at present occupied by the Department of Hygiene (including Bacteriology) but is soon to be vacated. Then Professor Ziegler intends to have a special assistant to take charge of the bacteriological work in connection with the autopsies, so as not to be obliged to depend, as heretofore, on the Hygienic Department. He is of the opinion that pathologists will not devote so much attention personally to bacteriology in the future as in the past, owing to the amount of time it requires, but will have special assistants who under their direction will attend to that branch of pathological work.

Each floor of the institute is divided lengthwise by a hall. On the first floor to the front are Professor Ziegler's two large, private working-rooms, and two occupied by the second assistant, who devotes one of them to his special class in the pathology of the nervous system. On the other side of the hall is a small lecture-room capable of seating at the most eighty men. Above, on the second floor, is a long room, capable of accommodating sixty to seventy men, which is devoted to Pathological Histology and to the demonstrations. The front half of this floor contains three rooms, one occupied by the first assistant, Professor von Kahlden, who has also, I believe, another room on the first floor, and a second in which at present four Russians are engaged in special pathological work. They are graduates in medicine, of whom three are sent abroad each year by the Russian government. They receive about \$1,750 a year for two years, and are allowed to go where they will and study what they will during that period. Their future success, however, depends somewhat on what they accomplish during that time. The middle and largest room is capable of accommodating about fifteen men. For the most part they are students working at theses, or graduates doing special work. There is also a room in the building occupied by several Italians, one of whom has been at work in the laboratory a year and a half.

Ziegler's teaching consists of five lectures a week of

1 See Letter from Prague, Vol. cxxx, p. 77, January 18, 1894.

three-fourths of an hour each, of three demonstrations (including instruction in the making of autopsies) of one to two hours each, and of two exercises in pathological histology of two hours each (the latter course for half a year only). As a lecturer he speaks without notes, clearly, directly and earnestly. He is at his best, perhaps, in his bistological class. Students are not, as a rule, admitted to this course until they have attended at least the lectures on general pathology. They are taught the various methods of preparing and mounting specimens; but, in order to cover a large amount of ground, stained preparations are often given, six or eight at an exercise. When the specimens are mounted, Professor Ziegler explains one of them, and draws on the blackboard with colored chalks the important features, while the class follows the description with their own preparation under the microscope. A few minutes are then devoted to passing around among the students to clear up or explain any points not understood. Then the next specimen is taken up in the same manner. At the demonstrations the students have the same seats, with microscopes before them. The pathological material is described, and then passed around for inspection. Important specimens, however, are carried around by the assistants, who point out to each student what is of interest. After the demonstration if there is no autopsy, Ziegler has passed to each student a mounted preparation of one of the important but rarer forms of lesions, such as cicatrix of brain, anterior polymyelitis, syringomyelia, syphilitic osteitis, etc., of which it would be impossible to give the class specimens each year. He then describes and draws the preparation, as in the histological class while the students follow him with the microscopical slides before them. About sixty mounted preparations of a lesion are required for his class. In all he has over thirty thousand microscopical preparations, of which a large number can be used for class purposes.

The autopsy-room is in a small connecting building back of the Pathological Institute. The amphitheatre is insufficient to seat all who come. Clinical autopsies take place here on all important cases. At the appointed time the medical or surgical professor, accompanied by his assistants, comes with his class; and Professor Ziegler makes the autopsy before them, dictating his report as he proceeds, and showing the specimens (with additional explanatory remarks if necessary) to the class. The clinical professor occasionally asks a question, but otherwise is not heard. Ordinarily a clinical autopsy lasts about an hour.

Inasmuch as the medical students in Germany cannot

Inasmuch as the medical students in Germany cannot take the examination in pathology until the end of all their medical studies, and are able to see the post-mortem examination of every fatal case that they have followed clinically, it must result in a broader and more intimate knowledge of pathology and in a higher appreciation of its importance, for it is looked to to solve all that is obscure or doubtful during life, and to render such cases clearer and better understood in the future. The clinical autopsy thus forms a great bond between the practical and the scientific sides of medicines, and serves to keep up the interest of the student in the subject of pathology until the end of his medical studies.

The summer semester is the more popular in Freiburg. The number of students in pathology is then about sixty. Ziegler lectures on general pathology, and takes charge of the class in pathological histology. During the winter semester the attendance is about forty. Ziegler then lectures on special pathological anatomy, while von Kahlden gives the instruction in pathological histology, covering the same ground that was gone over in the summer semester. Throughout the year von Khalden lectures once a week on some subject in special pathology. The number of autopsies is annually over four hundred.

STRASBURG.

The Pathological Institute in Strasburg occupies half of a very large polygonal building surrounding an open court adorned with plants and shrubs. There is abundant room for every purpose. The lecture-room is used in common

with the Anatomical Department, which occupies the other half of the building. One's first impression on entering the clinical autopsy-room is that it contains a patent arrangement for drying towels. Professor von Recklinghausen is eminently practical and original in his ideas and methods, and this room is of his own designing. In the centre under a large skylight, is a revolving autopsy-table of marble: surrounding the table and leaving just room enough for comfortable working rises a tier of four or five narrow, circular platforms, each fifty centimetres higher that the one below it and fifty centimetres farther away from the table. Attached to the front of each platform are iron rods supporting a railing at a convenient height to lean against when standing. Numerous towels lie across or are tied to the railings, for use after examination of the organs passed around. The object aimed at was to bring the greatest number into the closest possible range with the case under examination. It is said that a hundred men can be accommodated (all standing of course) in this amphitheatre which is about twenty-three feet in diameter. Two seats with writing-desks are provided in the first row for the two writers of the autopsy report, one copy of which is for the hospital, the other for the pathological department. In an adjoining room are three tables for the ordinary autopsies.

In the course in pathological histology no sections or ained preparations are ever given out. The students restained preparations are ever given out. ceive pieces of hardened tissue, from which they make razor sections: these are stained in alum carmine, and mounted in the usual manner. They are also encouraged to harden tissues and examine for themselves; for this purpose a large room is set aside where each may have a desk and work when he wishes. At the demonstrations the students are taught to examine scrapings and sections of the fresh Von Recklinghausen is enthusiastic in this kind of work, and devotes considerably more than the allotted time

This so-called practical method of teaching pathological histology has to some extent certain advantages, but it neglects all the advance made in the last twenty years in histological technique. It is most applicable in small classes where considerable personal attention can be given to each student. It is based more or less on the assumption that each student is to become his own diagnostician with no other instruments in his possession than a razor, alcohol and alum carmine. Its possibilities should be taught. But the much broader field of pathological histology as an actual demonstration under the most favorable conditions of perfection of section and staining, of the various lesions described in general and special pathological anatomy, and as the best aid to the thorough understanding of them, is to a large extent overlooked.

The number of students in pathology at Strasburg during the summer semester, the more popular term, is about eighty. The number of autopsies averages over eight hundred a year. A number of large, well-lighted rooms are available for special students. The museum is very large and abounds in interesting specimens.

It is interesting to compare the

AMERICAN AND GERMAN MEDICAL STUDENT.

The latter after about nine years of hard drill in the gymnasium, which covers most of the ground of the American preparatory school and college, is ready at the age of about nineteen years to enter the university, the most democratic institution of the Old World, for every professor and private docent is wholly independent, and may give such instruction as he will. The German State system of universities has many advantages over the independent institutions in our own country. The requirements of all are the same, and they are run interchangeably, so that the students form a vast floating population in the university towns. They can hear the best men in the various subjects or in the same subject. They can spend their winters in the large cities like Berlin and Vienna, and their summers in towns like Heidelberg or Freiburg, where the surrounding mountains and forests offer opportunities for delightful institutions.

tramps. Thus they see more of the world and obtain broader views than they can from living in one place all the time, for no one university can get the best men in every subject. They can also elect the university at which they will take their examinations.

THE AMERICAN AND GERMAN GRADUATE IN MEDICINE.

Doctors of Medicine in Germany are, as a body, better educated than our men at home. They have all been through the gymnasium, and have spent at least five years in the study of medicine. They are ready to enter practice (if they do not go into hospital work) at about the age of twenty-four. Our men at home who have been through Harvard College and then four years in the Medical School have undoubtedly received a broader training than the men here, but they are not ready to enter practice until about the age of twenty-seven.

The reason our college men enter the Medical School about four years later (at the age of twenty-three) than the men here is probably due in part to the following causes: They cover more ground than is gone over in the gymnasium. Their education previous to entering college has consumed more time than was necessary. American independence shows itself at a disadvantage at present in her educational institutions. There is a lack of harmony and of uniformity between them, even between the colleges and universities. Each has its own ideas, aims and standards. The public schools especially are run with too little reference to the requirements of the higher educational institutions of the country. They seek to furnish in themselves a complete education of a certain degree. The desire or the possibility of attending college is often realized for the first time when this early education is nearly completed, and valuable time has been lost in learning what was unnecessary for this or that college, and more time must be spent in getting up the extra work required.

The proposition is being at present agitated in Germany of allowing students who are going into medicine to study French, English and the natural sciences in the gymnasium, instead of the classics as heretofore, a step similar to the

broader one already taken at Harvard.

Of the four and a half to five years that a German stu-dent spends in the study of medicine the first two years are devoted to six subjects—chemistry, physics, botany, zoology, anatomy and physiology. That leaves three years for the rest of his medical education, the same length of time devoted in the Harvard Medical School to the same branches, namely, pathology, clinical medicine, etc. It is proposed, however, to make the course for M.D. in the German universities six years instead of five (the last year to be devoted to practical work), in order to raise the age of the medical graduates.

With regard to the study of medicine the German universities possess the great advantage that both the universities and the hospitals are State institutions. Consequently, the medical department and the hospital are very closely identified, and work in perfect harmony. The visiting staff of the hospital are the clinical instructors of the medical school. The Pathological Institute likewise stands in the closest relationship to the hospital, indeed, forms a very important part of it. Its duty is to solve all problems that are doubtful clinically, to correct errors of diagnosis, and to render clear the cause and nature of every diseased process, so that it may be treated intelligently. The pathological department of a hospital thus conducted becomes of inestimable advantage, alike to the patients and to those whose mission it is to heal them.

CLINICAL AUTOPSIES.

The introduction of clinical autopsies as a regular feature of the pathological teaching at home would undoubtedly and of clinical medicine and surgery. The examination in these subjects should then, however, all be put off until the time of graduation. Unfortunately this plan is not entirely feasible, owing to the independent condition of the various institutions. Very truly yours, F. B. Mallory, M.D.

METEOROLOGICAL RECORD.

For the week ending June 23d, in Boston, according to ob-ervations furnished by Sergeant J. W. Smith, of the United States Signal Corps:-

	Baro- meter		erme e te i		Re				ction ind.		city ind.	₩o'	th'r.	inches.	
Date.	Date.	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 ∆. Ж.	8.00 P. M.	8.00 ▲. Ж.	8.00 P. M.	R.00 A. M.	8.00 P. M.	Rainfall in in
S17 M18 T19 W.20 T21 F22 S23	29.86 29.98 30.06 30.01 30.06 27.97 29.94	84 79 75 74 74 77 83	95 90 83 >0 83 88 94	72 68 67 68 65 65 66 72	64 68 86 86 66 70 62	46 68 86 86 84 70 54	68 86	W. S.W. S.W. S.W. W. W.	S.W. S.W. S. S.W. S.W. W.	10 5 12 10 9 6 14	9 16 14 8 5 12 9	00000000	F. C. O. C. C. C. O.	.33	

* O., cloudy: C., clear: F., fair: G., fog: Ii , hazy: S., amoky: R., rain: T., threat-ning: N., anow. † Indicates trace of rainfall 67 Mean for week.

RECORD OF MORTALITY FOR THE WEEK ENDING SATURDAY, JUNE 23, 1894.

	ėd	tps	der years.	Per	COLLEGE	e of de	eaths f	rom
Oitles.	Estimated population.	Reported deaths in each.	Deaths under five year	Infectious diseases.	Consump- tion.	Diarrhoral diseases.	Diphtheria and oroup.	Soarlet fever.
New York	1,956,000	835	361	22.t6	11.52	10.20	7.08	2.16
Chicago	1,138,000	-) -	-	_	-	-	-
Philadelphia .	1.139.457	517	232	22.22	4.75	14.25	4.37	.95
Brooklyn	1,0+3,0+0	441	198	21.25	11.27	9.20	6.90	1.15
St. Louis	540,800	-	_		_			-
Boston	501,107	230	74	12.47	6.96	2.16	2.88	1.20
Baltimore	500,000		=					_
Washington .	808,431	170	97	85.99	5.31	24.78	2.36	_
Cincinnati	305,000	133	59	19.44	5.18	8.48	3.70	
Cleveland	290,000	119	66	24.08	15.48	8.60	1.72	1.72
Pittsburg	272,000	118	74	48.95	10.20	30.60	3.40	.85
Milwaukee	250,0 0	=	-					_
Nashville	67,754	31	9	12.92	8.23	9.69	3.23	
Charleston	65,165	38	19	7.89	_	2.63	_	2.63
Portland	40,000	==	12			-		_
Worcester	100,412	15		6.66	13.33	13.02	6.66	_
Fall River	92,236	46	30 15	23.87	15.19		2.17	_
Lowell	90,608	30		6.66	6.66	3.33 10.24	3.33	_
Cambridge	79,611	39	16	28.16	10.24	13.33	_	_
Lynn	65,124	15	- 5	33.33	6.66	10.00		_
Springfield	50, 85	19 15		15.78	15.78	33.83	10.52	_
Lawrence	49,902	19	8	46.66	6.66	33.00	_	_
New Bedford .	47,714	1		-	15.78	_	_	_
Holyoke	43,348	4	1	_	_	_	_	_
Brockton	33,939	7	2	28.56	-	_	28.56	_
Salem	83,155		2	28.00	_	_	28.50	_
Haverhill	32,925	12	3	8.33	16.66	_	8.33	_
Malden	30,209		3	25.00	10.00	_		12.50
Chelses	29,506	5	i	20.00	20.00	1 =	_	12.00
Fitchburg	29,3-3	2	l i		20.00			_
Newton	28,837 27,293	-		_	! -	1 _		_
Gloucester	26,751	5	0	20.00		_	20.00	_
Taunton Waltham	22,058	5	ŏ	20.00	20.00	_	20.00	_
	19,642		!	1 =	20.00		1 =	-
Quincy	18,642	3	1	_		_	=	_
Pittsfield Everett	16,002	8	4		_	_	_	I -
	16,331	3	i	33.33	=	_	_	l
Northampton . Newburyport .	14,073	7	2	14.28	_	_	_	14.28
Amesbury	10,920	3	١ĩ	17.20	38.83		=	14.20
Amesoury	10,020				30.00		_	_

Deaths reported 2,954: under five years of age 1,340; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fever) 764, diarrhœal diseases 335, consumption 309, acute lung diseases 270, diphtheria and croup 249, scarlet fever 46, whooping-cough 45, measles 30, typhoid fever 25, cerebro-spinal meningitis 17, erysipelas 10, malarial fever 4, small-pox 3.

From whooping-cough Washington and Pittsburg 7 each, Philadelphia 6, Cleveland 4, New York, Cincinnati and Fall River 3 each, Boston 2, Cambridge, Lynn, Springfield, North Adams and Marlborough 1 each. From measles New York and Brooklyn 9 each, Cleveland 8, Philadelphia 2, Pittsburg and Northampton 1 each. From typhoid fever Washington 7, Philadelphia 5, Pittsburg 3, Cincinnati 2, Brooklyn, Boston, Cleveland, Charleston and Lynn 1 each. From cerebro-spinal meningitis New York 5, Cincinnati, Somerville and Lawrence 2 each, Washington, Cleveland, Fall River, Lynn, Chelsea and Marlborough 1 each. From erysipelas Pittsburg 3, New York,

Brooklyn and Cincinnati 2 each, Philadelphia 1. From small-pox Brooklyn 2, New York 1.

Brooklyn 2, New York 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending June 16th, the death-rate was 15.9. Deaths reported 3,183: acute diseases of the respiratory organs (London) 184, measles 188, whooping-cough 90, diphtheria 60, scarlet fever 35, diarrhosa 31, fever 26, small-pox (Manchester 6, Birmingham 5) 11.

The death-rates ranged from 10.2 in Leicester to 22.1 in Wolver-leichter 18, which will be converged.

hampton; Birmingham 12.8, Bolton 17.2, Brighton 14.9, Croydon 12.1, Hull 13.2, Leeds 15.6, Liverpool 20.1, London 16.0, Manchester 16.5, Nottingham 20.5, Portsmouth 12.5.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 23, 1894, TO JUNE 29, 1894.

MAJOR GEORGE H. TORNEY, surgeon, is relieved from duty as attending surgeon and examiner of recruits at Philadelphia, Pa., and will report in person to the superintendent, U. S. Military Academy, West Point, N. Y., for duty at that post. relieving MAJOR PHILIP F. HARNEY, surgeon, who, after being thus relieved, will report to the commanding officer, Plattsburg Barracks, N. Y., for duty at that post.
FIRST-LIEUT. CHARLES WILLCOX, assistant surgeon, relieved from duty at Angel Island, Cal., and ordered to Presidio of San Francisco, Cal., for duty, relieving FIRST-LIEUT. HARLAM E. MC VAY, assistant surgeon.

Francisco, Cal., for duty, relieving First-Lieut. Flaribles of Mc Vay, assistant surgeon.

First-Lieut. McVay, on being thus relieved, ordered to Alcatraz Island, Cal., for duty, relieving Captain Ogden Rafferty, assistant surgeon.

Captain Rafferty, on being thus relieved, ordered to Benicia Barracks, Cal., for duty, relieving Major Joseph B. Gydand approach

Benicia Barracks, Cal, for duty, relieving MAJOR JOSEPH B. GIRARD, surgeon.
MAJOR GIRARD, on being thus relieved, ordered to duty at Presidio of San Francisco, Cal.
LIEUT.-Col. Johnson V. D. MIDDLETON, deputy surgeongeneral, is relieved from duty at the Presidio of San Francisco, Cal., and will report to the commanding general, Department of California, for duty as medical director of that Department, relieving LIEUT.-Col. ALBERT HARTSUFF, deputy surgeongeneral.

LIBUT.-COL. HARTSUFF, on being thus relieved, will report in person to the commanding general, Department of the Missouri, for duty as medical director of that Department.

Missouri, for duty as medical director of that Department.
Leave of absence for two months, to take effect upon the
return of Major Calvin Drwitt, surgeon, to Fort Leavenworth, Kansas, is granted First-Lieut. William F. Lippitt,
Jr., assistant surgeon.
Leave of absence for one month, to take effect on or about
July 1, 1894, is granted Captain Guy L. Edie, assistant sur-

geon.

LIEUT.-COL. JOSEPH P. WRIGHT, deputy surgeon-general, to be assistant surgeon-general with the rank of Colonel, May 16,

MAJOR ALFRED A. WOODHULL, surgeon, to be deputy surgeon-general with the rank of Lieut-Colonel, May 16, 1894.

MAJOR JOHN S. BILLINGS, surgeon, to be deputy surgeongeneral with the rank of Lieut-Colonel, June 6, 1894.

CAPTAIN WILLIAM R. HALL, assistant surgeon, to be surgeon with the rank of Major, May 16, 1894.

CAPTAIN GEORGE H. TORNEY, assistant surgeon, to be surgeon with the rank of Major, June 6, 1894.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOUR WEEKS ENDING JUNE 23, 1894.

GLENNAN, A. H., passed assistant surgeon. Granted leave of

WERTENBAKER, C. P., passed assistant surgeon. Granted leave of absence for five days. June 18, 1894.

WOODWARD, R. M., passed assistant surgeon. To proceed to Cleveland, O., for duty. June 11, 1894.

WERTENBAKER, C. P., passed assistant surgeon. To proceed

to Reedy Island Quarantine for special temporary duty. June 12, 1894. Steward, W. J. S., assistant surgeon. Granted leave of ab-

sence for thirteen days. May 29, 1894. PROCHAZKA, EMIL, assistant surgeon. To proceed to New

York, N. Y., for duty. June 11, 1894. THOMAS, A. R., assistant surgeon. To proceed to St. Louis, Mo , for duty.

RECENT DEATHS.

Gerritt James Bradt, M.D., M.M.S.S., of Lowell, died at North Chelmsford, July 1, 1894, aged forty-five years.
De. William (†. Austin, died June 12th, in New Orleans, aged eighty years. He was superintendent of the Charity Hospital in New Orleans before the war and had charge during the Mariborough 1 each. From erysipelas Pittsburg 3, New York, terrible yellow fever epidemics of 1867 and 1868.

Address.

THE LEGISLATIVE CONTROL OF MEDICAL PRACTICE.1

BY REGINALD H. FITZ, M.D., BOSTON.

(Concluded from No. 1, p. 5.)

THE law would be simpler, fairer and easier of execution, if, as in twelve States, an examination were made the sole test of the applicant's intellectual and educational qualifications. Such a uniform test relieves the law from the charge of class-legislation, and permits the standard to be raised or lowered in accordance with the educational development or the social needs of the State concerned. The examination should be elementary and practical, both oral and written, with demonstrations when feasible, and should be designed to elicit rather the minimum than the maximum of requirement. Only licensed physicians should serve the State, and a higher order of fitness should be demanded from them than from those who serve the individual only. The latter may be satisfied with an assurance of therapeutic knowledge, the former may believe that this exists provided the other qualifications are present. The State should, therefore, require a certain knowledge of anatomy, physiology, chemistry, pathology, surgery, obstetrics and the diagnosis and treatment of disease before granting the license. highest attainment of medical knowledge will always be demanded by the universities which are the chariest of the reputation of their degrees. A lower standard suffices for the State medical society desirous of including within its ranks all the intelligent, educated and moral physicians of the State. The last must recognize the existence of two classes of practitioners, the licensed and the unlicensed. The former, alone, should be authorized to perform all public services, the latter may be permitted to treat the sick on condition that it shows, in advance, a knowledge of contagious diseases and the means of preventing their spread.

The examinations should be of a semi-public character, best accomplished by the preservation for a limited time of the questions and their answers. documents will give the best evidence of the fairness or unfairness of the examiners, and will show the scope. It would be well for some of them to be published from time to time, that the public may be informed of the effect of the law. This is done in Virginia and Minnesota, and a few of the questions and answers are here given. The following are from Virginia: 84

"Give general and descriptive anatomy of the stomach. It is the organ where the food is digested; it is a very extensive organ."

"Describe or define a cell. It is a place of confinement." "The normal temperature of the human body is from 112° to 140°, and the average respirations are 70 per minute."

"The technical name of rhubarb is columbo."

"The dose of antipyrin for a child five years old is fifteen grains every three hours, and that of morphia hypodermically for a child of the same age would be one-fourth of a grain, and if that doesn't give relief I would give one-half grain."

"Phymosis is the result of old age. To the question of

the diagnosis of the dislocation of the head of the femur on

¹ The Annual Discourse before the Massachusetts Medical Society delivered June 17, 1894.
⁸⁴ Coll. and Clir. Record, 1890, xi. 8. Journal Am. Med. Association, 1891, xvi, 108

the dorsum of the ilium, it is replied, "Don't know much about the diagnosis, but the treatment is amoutation."

"The symptoms of cedema of the glottis are that the patient feels husky and has a sore throat. I would amputate it if necessary. I would do the operation within three or four months if it was a bad case.'

"Extra-uterine pregnancy may be a fungoid growth or tumor, fibroid in its character, or any extra growth in the

utrous would be call extra-uterine pregnancy.

"A breech presentation may be known by the sense of touch, the buttox being different in formation from the cranium. The anus is different from the mouth, absence of tongue and nose. Get your finger in the inguinal region soon as possible and assist your patient by ferm but gental tention."

"The best way to facilitate the expulsion of the placenta is to let the woman get up and walk about the room, allowing five minutes to elapse after delivery before requiring her to get up and walk."

In Minnesota the following answers were given: 85

"The scrofulous diathesis is known by a peculiar greasy exudation from the axilla or inside of the thighs, possibly

behind the ears; has a sour, fetid, strong smelling odor."
"Symptoms of cardiac dilatation — a dull pain at pit of stomach, and a feeling of water in the bowels, ematiation, anema, loss of flesh. Treatment, put patient on a milk diet, and give rectal onema of pepsonical food, and a nerve tonic to tone up the system."

"Treatment of neuralgia — if the part is swollen up such as the cheak may apply a worm poultice, paint the part over with iodine."

"Locomotor ataxia - hear all the lesions or pathology changes is situated in the forth ventricle of the brain, and a slight pathological chage in the peduncles of the seberlium (I am rattled if that ain't right)."

"Placenta prævia (this is a retaining of the placenta structures after the delivery of child, and a part of the placenta), all is to be done in this case is to introduce the hand or a instrument and remove any of the membranes that is left or curet the utris."

"Symptoms of typhoid fever — the patient has a tongue heavily fured putrid offensive; head feels scattered about.'

The candidate who has passed a successful examination receives a certificate to this effect — the license which is recorded in the office of the board of examiners and should be registered elsewhere, that the names of the legally qualified physicians may be readily found. The place of registration varies in the different States. In many the County Clerk is the registering officer, in others the Clerk of the Superior Court, or of the District Court has charge of the register. In South Dakota it is kept in the Registry of Deeds, while in Alabama the Judge of Probate is the officer of registration. The importance of such registration is illustrated by the experience of North Carolina in 1891, in which year many physicians remained unregistered, of such influence and standing in the community as to defy the law with impunity.

The examining board should have the power of refusing or revoking licenses for cause, and should be able to subpœna witnesses, hear testimony and decide. Any appeal from the decision should be made to the Governor. The cause for such revoke or refusal of the license should be criminal, unprofessional, dishonorable or disgraceful conduct. Instances of unprofessional conduct are to be found in untruthful or improbable advertisements of promised treatment, deceiving the public; advertising methods or medicines regulating menstruation or re-establishing suppressed menses.

85 North-Western Lancet, 1891, xi, 139.

That the law may be enforced it is necessary that there should be a penalty for evading its provisions, and officers to bring charges against the law-breakers. The penalty varies in the United States from \$10.00 to \$500.00 fine, or imprisonment from ten days to a year, or it may be both fine and imprisonment. A severer penalty should be enforced for repeated offences. The severest penalties are inflicted for filing or attempting to file the certificate of another or for false or forged evidence; the crime is then regarded as felony, punishable as forgery.

It has been found difficult to enforce the laws in many States, since some examining boards object to being both accusers and judges. Physicians are usually unwilling, and prosecuting officers refuse to bring charges, unless it is made their duty. In certain States any person may sue and recover for evasion of the law. In Wyoming it is the duty of the police, sheriff or constable. It should be made the duty of the examining board to bring charges before the proper officials. This responsibility will be so grave as not to be lightly undertaken, and should only be assumed in such instances as the public will approve.

All recent legislation has been found impossible without first harmonizing the most powerful antagonists. The State makes no distinction between the various incorporated medical societies, and will not legislate at the suggestion of the one if the others oppose. Regulars, homeopathists and eclectics, and all practitioners possessing a diploma or license to practise. must therefore be united in their approval of the provisions of the bill. The law must not exclude from practice those who have been employed for a period of years, and who during this time have had equal rights with members of the incorporated societies. Its prohibitory provisions should not be enforced until a sufficient lapse of time to allow registration to be accomplished, and examinations to be held throughout the State. Permission to register should thus be allowed to all practitioners with or without diplomas or certificates at the time of the enactment of the bill, or to those only who have been in continuous practice for one or more years. The limit most frequently assigned is ten or more years. After the enactment of the bill all practitioners of medicine should register within a limit of time, from six months to a year, or be subject to the penalty.

The law should define what is meant by the practice of medicine, this having been found necessary both in avoiding ignorant opposition to its acceptance, and in securing the enforcement of its provisions. The following definition appears in the law of Georgia:

"To practise medicine means to suggest, recommend, prescribe, or direct, for the use of any person, any drug, medicine, appliance, apparatus, or other agency, whether material or not material, for the cure, relief, or palliation of any ailment or disease of mind or body, or for the cure or relief of any wound, fracture, or other bodily injury, or any deformity, after having received or with the intent of receiving therefor, either directly or indirectly, any bonus, gift, or compensation."

In Minnesota, "appending 'M.D.,' or 'M.B.,' to name, or prescribing, directing or recommending for use [of any person] any drug or medicine or other agency for the treatment, care or relief of any wound, fracture or bodily injury, infirmity, or disease, is regarded as practising medicine."

The following persons should be exempt from the nal nature.

action of the law: medical officers of the army and navy of the United States, or of its Marine-Hospital service; legally qualified physicians or surgeous called from other States to attend patients in the State concerned, or to consult with the physicians caring for them; members of the resident staff of any legally incorporated hospital or asylum; medical students under the direct supervision of their medical teachers; midwives attending cases of confinement; nurses in their legal occupation; dentists, exclusively practising dentistry: manufacturers or dealers in artificial eyes, limbs, orthopedic instruments, or trusses or like apparatus for the use of the sick or infirm; pharmacists or apothecaries dispensing or selling medicines or medical appliances; sellers of mineral waters, or of patent or proprietary medicines in the regular course of trade; gratuitous advisers in cases of emergency; domestic prescribers; persons giving advice in regions where there is no licensed physician within ten miles.

The Connecticut law of 1893 also exempts chiropodists or clairvoyants not using in practice drugs, medicines or poisons, persons practising massage or Swedish movements, sun-cure, mind-cure, magnetic healing, or Christian science, and persons not using or prescribing in their treatment of mankind, drugs, poisons, medicine, chemicals or nostrums.

To what extent does the proposed Massachusetts law comply with these essentials?

The board of registration is composed of seven members, of whom not more than three shall be at any one time members of any one chartered State Medical Society, and it is appointed by the Governor and Council. This action is fair to all, and the appointment lies in the hands of the executive of the people.

All practitioners of medicine graduated from legally chartered medical colleges or universities having power to confer degrees in medicine, and every practitioner of medicine in this State continuously for three years previous to the passage of the act, shall be entitled to registration upon the payment of a fee of one dollar, and must be registered by January 1, 1895. This section is fair to the majority of the irregular practitioners, whose legal status up to the enactment of the bill is equal to that of the medical graduates of incorporated schools and universities. It gives them no privileges not already possessed. Any person not entitled to registration as aforesaid may pass an elementary and practical examination wholly or in part in writing, embracing the subjects of surgery, physiology, pathology, obstetrics and the practice of medicine, and sufficiently strict to test his or her qualifications as a practitioner of medicine. Such an examination would permit any competent and trustworthy practitioner, who had been in practice for less than three years, to be registered even if possessed of no degree. A person who can show that he knows how to practise surgery, obstetrics and medicine should not be debarred by lacking a degree. He may not be the wisest, most skilful and moral physician, but he is likely to do no harm to the people at large.

Although certificates may be revoked for criminal cause, the original bill permitted them to be revoked for any cause satisfactory to every member of the board. The bill has been distinctly weakened by this amendment, since the public may be injured by unprofessional, disgraceful and dishonorable conduct on the part of the practitioner, as well as by that of a criminal nature.

The provision to make it the duty of the board to investigate all complaints of disregard, non-compliance or violation of the provisions of this act, and to bring all such cases to the notice of the proper prosecuting officers, is eminently judicious. It would have been more efficient had the board been allowed to subpœna witnesses.

The committee's bill required that after 1894 all applicants for registration should be examined. This section has been weakened by exempting the graduates of legally chartered medical colleges and universities of the Commonwealth. The standard may be much higher for their degree, but the State makes them privileged by practically granting them the power of license. There should be no confounding of the license and the degree, and the chartered medical colleges or universities should be the first to request the elimination of this clause.

Section 10 is defective in that it allows the registered physician or surgeon to append to the name the letters "M.D.," whether the degree has been received or not, and punishes the unregistered M.D., who has earned the title, by a fine if he does not register. The physician or surgeon is defined as one who advertises or holds himself out as such by appending the letters M.D. or using the title of doctor, meaning thereby doctor of medicine. But the law gives no definition of the practitioner of medicine for whose registration it is intended to provide.

The chief weakness of the law is the amendment to the committee's bill, which permits any one to practise medicine without an examination, provided such person does not make use of the title doctor or the letters M.D., meaning thereby doctor of medicine.

These are the practitioners who should be controlled—not because they harm the individual, for if he desires them that is his privilege, but because the ignorance of such persons is a constant source of danger to the entire community. If they are to be allowed to practise, and they are welcomed by some, the protection of all demands that they should show, by examination, a familiarity with the means of recognizing the contagious diseases, and of so treating them that they may not promote the spread of small-pox and diphtheria, of measles, scarlet fever and the like.

The law is a safeguard to the community to a certain extent. It represents essentially a return to the conditions which prevailed when the State assigned the duty of licensing physicians to the Massachusetts Medical Society. It enables a discrimination to be made between registered and unregistered practitioners, those of some education and those of no education; a distinction which will increase in value to the public in the course of time. If it has no other merit it provides for the appointment of State officials to execute the law, and thus offers a constant, impartial and efficient means of recommending to the legislature any necessary amendments in the future. It is of no value to the Massachusetts Medical Society, which has no need of it. Her standard will always be the loftier, however high that of the State may be raised. a member of the Massachusetts Medical Society will continue to represent association on terms of equality with the most intelligent, the best educated and the most honorable physicians of the State.

Of 545 cases of morphinomania in France recently studied by Lacassagne, 289 occurred in physicians.

Original Articles.

THREE YEARS' EXPERIENCE WITH SANITA-RIUM TREATMENT OF PULMONARY DIS-EASES NEAR BOSTON.¹

BY VINCENT Y. BOWDITCH, M.D.,

Assistant Visiting Physician at the Boston City Hospital; Assistant in Clinical Medicine at the Harvard Medical School.

In presenting to you the results of treatment of pulmonary diseases in the last three years at the Sharon Sanitarium in Sharon, Mass, near Boston, I do not claim anything strikingly original; but the results obtained thus far are, I feel, of sufficient interest and importance for me to ask your attention for a short time, with the hope of convincing others that similar methods adapted under like conditions, may bring forth equally good, even better, results than these.

Some of you may remember that about four years ago, at a meeting of this Society, I mentioned the fact that, through the generosity of wealthy people interested in the scheme, Dr. R. W. Lovett and I had the intention of erecting a small sanitarium for the treatment of people of very limited means (the most difficult class to reach) who were just beginning to show signs of tubercular disease of the lungs, and who from lack of means are unable to seek distant health resorts. In that paper I briefly mentioned the various sanitaria now well known to the whole profession, namely, Gœrbersdorf in Silesia, Falkenstein near Frankfort-on-the-Main, Dr. von Ruck's in Asheville, N. C., Dr. Trudeau's at Saranac in the Adirondacks, the Bellevue and Glockner Sanataria at Colorado Springs, and others in California.

All of these institutions are more or less remote from our great cities, and are situated in climates which in themselves are considered favorable for consumptives; the exception possibly being Falkenstein in Germany, which is not many miles from Frankforton-the-Main, yet this institution has the advantage of being at a considerable altitude (about 1,500 feet above sea-level), and is intended for the wealthier classes.

The Sharon Sanitarium has these distinctive features, and so far as I know is the only one in this country which combines the following conditions, namely, that it is within easy access of Boston, situated in our New England climate, which is notoriously unfavorable for consumptives, at an altitude of about 400 feet only, and is intended for the use of people of very limited means, like teachers, shop-girls, etc., not for the wealthier classes, and is supported chiefly by public subscriptions.

Our friend and late member of this Association, Dr. Paul Kretschmar, four or five years ago in two or three papers, strongly urged the establishment of these institutions in the vicinity of our great cities in properly selected healthy regions; and had not his labors been cut short by death, I do not doubt that before this some establishment similar to that now in Sharon would have been founded near Brooklyn and New York.²

It goes almost without saying, and yet it is a point I especially wish to emphasize, that I have never hoped to obtain such results as are shown by the removal of consumptive patients to more healthful climates than

 Read at the meeting of American Climatological Association at Washington, D. O., May 30, 1894.
 Since beginning to write this paper I have been gratified to hear that a similar project has been started in New York under the guidance of our confreres, Drs. A. L. Loomis and Charles E. Quimby.

can be found in New England. Such a claim would be foolish in the extreme, but I have been confident that much more could be accomplished than by the usual methods employed in the above-mentioned cases. I am sure there is not a physician before me today who, time after time when finding symptoms of incipient pulmonary disease in some excellent young man or woman, has not had the disheartening question come to him, "What can I do to help this patient with little or no money at his or her disposal?" We all know the usual result in such cases. Routine treatment of cod-liver oil, cough syrups, advice to get into the open air, to eat good food, etc., with the knowledge that in the vast majority of cases it means a slow and steady going down-hill of the patient. We know, too, what the result is usually of advising patients to go out into the country to live in the ordinary cheap American boarding-house, with draughty, poorlywarmed rooms and badly-cooked food. Improvement may come for the time, but usually the same result follows sooner or later. In such cases I have felt for several years if I only had some place in the country comparatively near, under my control, where people could be under medical supervision with proper hygienic and dietetic treatment that a good deal more could be done than heretofore to reduce the death-rate from consumption among my poorer patients.

The Sharon Sanitarium is a large wooden building situated on a high gravelly knoll which slopes towards the south, and is sheltered on the north, west and east by heavy pine woods. It was built especially for the purpose, and can accommodate at present only nine women patients, but in the future the directors hope to obtain sufficient funds to erect cottages near the present building for the accommodation of both sexes.

It is so constructed as to obtain as much fresh air and sun-light as possible by means of numerous windows and open fireplaces in every room.

Each patient has her own special bedroom. Broad piazzas enable the inmates to be much of the time out of doors, even in the coldest weather, either walking or lying well wrapped up in reclining-chairs.

The interior walls are painted not papered, the floors are of hard wood, both being frequently wiped or mopped with damp cloths, and are never dusted or swept. Rugs, and no fixed carpets, are used.

The strictest rules are made for the destruction of the sputa. Large cuspidores filled with damp sawdust are on the lower floor, and the contents destroyed by fire. The "Sanitas paper cups" are used at the bed-side; and when upon the grounds each patient is provided with a rubber pouch filled with a roll of Japanese paper, which is destroyed also by fire upon the patient's return to the house.

In short, every precaution is taken to prevent possible infection from the chief source of danger, according to our present knowledge, the dried sputa.

Inasmuch as I believe that my hopes have been justified by the results thus far obtained, although the work has been of necessity, up to the present, somewhat limited, I present the following facts for your judgment:

Since the opening of the sanitarium on February 9, 1891, 51 patients have been received, the comparatively small number being due to the prolonged stay necessary in such cases.

Three patients did not remain long enough to receive treatment, and are therefore not considered.

Of the remaining 48, eight proved to be cases of bronchitis, and were discharged "well."

Of the 40 cases classed as various forms of phthisis, 10 have been discharged as "arrested cases," that is, where cough and expectoration have ceased and the physical symptoms have either disappeared or else have shown the usual signs of a cessation of active processes.

In no case have I used the term "cured," although in the majority of the arrested cases, as far as outward appearances are concerned, the term would have been justifiable; yet the treacherous nature of the disease demands perhaps a longer interval of time before we are justified in using the more absolute term. Several of the patients, however, have been away from Sharon more than a year and a half, and we continue to get the most excellent accounts of their health.

Of these 10 "arrested cases," two upon entrance showed signs and gave histories of trouble dating back at least a year or two, and were not what could be classed as strictly "incipient cases." Both lungs were involved in the first of these cases, the disease being more of the fibroid variety. The right lung in the other case was affected with a rather advanced catarrhal form of phthisis. The former, a more advanced case than I now accept at the sanitarium when possible to avoid it, left after a stay of a few months with an almost entire lack of abnormal symptoms (that is, absence of cough, sputa and fever), feeling "stronger than for nine years previously," and remained in this condition until about a year ago when an unfortunate combination of events, namely, swallowing by mistake a dose of ammonia, the presence of two tape-worms, and a severe attack of la grippe so reduced her strength and renewed the old trouble that she applied again for entrance this winter with an access of pulmonary trouble which was only partially relieved by a short stay at the sanitarium.

The other case left Sharon against advice soon after the cough and expectoration were gone, and resumed, unfortunately, her previous laborious occupation of teaching. She remained, however, in about the same condition for over a year, when she suddenly died after a short illness of two or three days, the nature of which I could not learn from her physician; but she had continued her teaching up to that time, and had seemed in fairly good condition until shortly before her death.

Of the other eight "arrested cases" I have the most excellent accounts, with one exception. She has not communicated with me or her other physician, Dr. J. E. Goldthwait, for over a year, but at last accounts was feeling well; and inasmuch as she promised faithfully to let us know if anything should go wrong, we have reason to believe she is doing well, although we have lost sight of her for the present.

All of these cases have been away from the sanitarium more than a year; most of them nearly two years, with one exception. She was discharged last autumn, and is now living in the country, whence she writes most enthusiastically of her "perfect health," "better than ever in my life before."

The details of these cases I shall print with my paper, but forbear to read them now, owing to lack of time and for fear of wearying you.

In only three of these cases were bacilli found in the sputa, and possibly the results may be challenged in consequence. In reply, I can only say that experience has shown us that for months we may examine the sputa in vain to find bacilli, when the physical signs give us the strongest evidence of phthisical disease, and the absence of bacilli is no proof of the absence of incipient tubercular trouble. On the contrary, in all of these cases many or all of the symptoms which we recognize as those of incipient pulmonary tuberculosis were present, namely, hemoptysis, cough, sputa, loss of flesh, fever, night-sweats, malaise, variation in the percussion note, respiratory murmur, etc.,—symptoms in themselves of vastly greater clinical significance to my mind than the mere absence or even presence of bacilli.

Of the 13 cases recorded as "much improved" (by which is meant a marked increase in general strength, weight, marked diminution or cessation of cough and expectoration with decided improvement in the physical signs), one (No. 33) is soon to leave as an "arrested case," all signs having disappeared, the patient being fat and well after a stay of nearly two years. One (No. 31) who had marked signs at the base of the right lung, will also probably leave this summer with few or no abnormal symptoms after two years' stay. One (No. 49) with hemoptysis and slight signs in the right lung, gained 28 pounds in nine months; is the picture of health and strength; and if all continues favorably, will be discharged this summer. One (No. 42) who entered January, 1893, with a diffuse. bronchitis in addition to incipient trouble at the apex of the left lung, has long since shown little or no sign of pulmonary disease, but has been a great sufferer from uterine disease and obliged to undergo a severe surgical operation, and is now at the Vincent Memorial Hospital in Boston for that purpose. One (No. 50) who entered for hemoptysis, cough, etc., with slight signs in the right lung, gained 141 pounds in four and a half months, the cough and expectoration diminished greatly and the general condition greatly improved. Having been offered a home in the foot hills of California with an aunt, the patient is now there with a good prospect of recovery. One (No. 29) sent by Dr. F. 1. Knight, having been nursed through several violent hemoptyses during which she nearly died, after a stay of four months and a half, left the sanitarium bright and strong, with marked diminution of all signs; was married, and went to live in Boerne, Texas, where she steadily improved, but died lately from puerperal fever.

The foregoing six cases, and three others, were "incipient cases," while others of those who were "much improved" were in more or less advanced stages of disease.

Bacilli were found in all but two of these cases (Nos. 31 and 33). Both of these cases, however, have had evidences of pulmonary disease such as hemoptysis, cough with sputa, malaise, a loss of flesh, more or less fever, night-sweats, etc., and in one (No. 31) marked signs at the base of one lung persisted for months.

Of the six classed as "improved," that is, in whom there was some slight amelioration of abnormal symptoms temporarily, four (Nos. 12, 16, 39 and 51) were well advanced cases, and two (Nos. 43 and 46) were incipient cases, who for various reasons failed to obtain much benefit from their stay and left Sharon.

Bacilli were found in the sputa of these six cases in varying quantities.

Of the eleven cases classed as "not improved," seven were in far advanced stages of the disease

(severe cough, marked emaciation, cavity formation, etc.); two had well-marked disease; and two were "incipient cases," who went rapidly down-hill in spite of all treatment, and left Sharon after a stay of a few mouths.

In all of these, except four, bacilli were present in the sputa; and in the cases where they were not found, other evidences of marked pulmonary disease were present.

In looking over these records, then, I think we may feel justified in holding the views already expressed, namely, that a great deal more can be done than hitherto in the neighborhood of our great cities in harsh climates for this most unfortunate class of patients.

Again I say that, in comparing the results with those obtained in more healthful climates, the percentage of those who are benefited is, of course, much smaller in the former than in the latter case; but that is no reason for hindering our efforts to improve present conditions for those who cannot go so far from home.

The fact that present results, moreover, have been accomplished under somewhat adverse circumstances has its encouraging side; and we feel confident that the experiment is but a stepping stone to better and more far-reaching results, which can be obtained chiefly through larger funds, which will surely come as the institution becomes more widely known.

ADVANTAGES OF SANITARIUM TREATMENT.

This is an important point, and one upon which I wish to dwell a little.

There is among the community a perfectly natural dislike at first thought towards the idea of bringing a number of consumptive patients together under one roof, as it were. Even among physicians we find this prejudice existing; and before the Sharon Sanitarium was opened it was one of the chief objections in my own mind, so much so that when making visits to celebrated sanitaria both in this country and in Europe, it was one of my first questions, "What effect do you notice from the proximity of the patients to each other?" In every case I found the objection proved to be practically nil.

Doubtless, to one casually visiting a sanitarium where all stages of the disease are received, the effect is at first most sad and depressing; but it has been almost the universal experience of those who have had charge of these institutions that, although there may be a certain amount of depression at first, it wears off in a comparatively short time, especially where symptoms of improvement appear. Certainly I can add my testimony to this fact.

On the other hand, the advantage to be obtained from keeping patients under medical control for a longer or shorter period, as contrasted with the haphazard methods of sending them into the country, or even to distant health resorts to live in hotels or boarding-houses, to follow out their own inclinations,—the advantages of the former method, I say, are such that only the most prejudiced observer could deny them.

The ideal way, doubtless, would be for each patient to select his own health resort, away from all invalids, and to keep himself under the sole control of a special physician; but how many of the thousands afflicted with this disease have the means to adopt such measures?

Under sanitarium treatment, unfavorable symptoms

can be watched more carefully and prompt measures taken to check them. The regular methods to which the patients become accustomed are also especially beneficial in their life after discharge; and at Sharon constant endeavors are made to secure other modes of self-support than those in which the trouble began.

It has been the endeavor of the management to receive only such cases as are showing the very earliest symptoms of phthisis, although the rule was infringed in several cases at first, before the sanitarium was well known; then, too, others have entered at the recommendation of physicians who have not realized the full extent of the trouble, and rather extensive disease has been found.

If patients do not improve after a stay of several weeks, or run rapidly down-hill, it is always understood among the friends that other measures must be adopted, the reason for this rule being that we do not pretend to make it a hospital for very sick patients, which would defeat the very purpose for which the sanitarium was founded.

METHODS OF TREATMENT.

Hitherto the almost daily visits of efficient medical assistants at the sanitarium has been a marked factor in obtaining any favorable results; but the constant supervision of a competent resident physician is what we now desire. This I believe to be a necessity for the best results.

The chief aim at the sanitarium always has been to teach the patients that fresh air and good food are essential for recovery. Judicious exercise, according to the capacity of each patient, is enforced. At first only exercise on the piazza is allowed, until the strength of the patient is tested, and especially if there is a hemorrhagic tendency. Gradually the patient is allowed to take longer walks, and finally is advised to ascend the hills slowly, the injunction always being given to stop before the point of fatigue is reached. Rest in the open air, even in the coldest days of winter, is a marked feature of the treatment, the patient being wrapped in blankets and allowed to remain for hours in a sheltered portion of the piazza in the sunshine. Drugs are avoided as much as possible, unless it be some tonic to increase the appetite, an aid to digestion, or some simple cough-syrup.

The daily or tri-weekly use of the pneumatic cabinet I regard as a most invaluable adjunct in the treatment of all these cases, chiefly from the calisthenic effect upon the chest. I have never seen serious deleterious effects from its judicious use; but, on the contrary, its power of increasing the amount of expansion and of improving the shape of the chest is very marked. Frequently some soothing vapor is used as an inhalation in connection with it when bronchitis is marked, but this is done as a means of alleviation only. As to the germicidal effect of any vapor within the lungs I have no faith.

³ Dr. S. E. Solly, in his paper on "Climate," in Vol. I of "Hare's System of Therapeutics," gives some elaborate and interesting tables of statistics, the one which bears upon this special point being as follows:

Comparison between Open Resorts (that is, hotels, boarding-houses in health resorts), and Sanitariums in Low Climates.

		No. of	Per cent. cured.	Per cent. benefited.
All stages of disease. Open resorts in low climates		1,724	6	46
Sanitariums	•	2,443	13	. 27 <u>1</u>
Open resorts in low climates Sanitariums	:	625 89	5 31≟	45 45

Finally, in addition to the cabinet treatment, the patients are taught to take deep inspirations and to hold the breath, expelling it again as far as possible, frequently through the day, a method to which too little attention is paid generally in the treatment of any pulmonary disease.

Tuberculin has never been used at Sharon. My experience with several patients at the Carney Hospital, in Boston, just before the sanitarium was opened, when the excitement over tuberculin was at its height, made me decide that I should try other methods at Sharon until further experiments had been made by Koch himself. I have been much interested in the accounts given of late by Drs. Trudeau and von Ruck of their recent experiments with tuberculin; but although impressed always by what comes from such sources, I do not yet feel wholly convinced of the efficacy of even the modified methods of using this remedy.

(To be continued.)

SPINAL CONCUSSION.—TRAUMATIC SPINAL SCLEROSIS.

BY PHILIP COOMBS KNAPP, A.M., M.D.,

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(Concluded from No. 1, p. 7.)

WE see then that, even in a simple traumatic lumbago, there are various ways in which the cord may become involved, and that certain symptoms may perhaps be due to disturbance of the cord. At least, we cannot say definitely that such a thing is impossible.

This reasoning, however, is somewhat hypothetical, and neither side of the controversy can, as yet, be absolutely proven.

Certain cases have come under my observation which apparently are due to injury, yet the symptoms have developed slowly and the symptoms are undoubtedly due to changes in the cord.

Thos. C., thirty-nine, single, a butler, presented himself at the City Hospital on the 25th of January, 1893. His family history was good, an uncle and an aunt living to be well past ninety. He himself had always been well. He had never used tobacco or alcohol to excess, and he denied not only any venereal disease, but any exposure to venereal infection. Four years before, in the winter, he was helping a very heavy woman down a long flight of steps, when he slipped and slid down a dozen or fourteen steps on his back with the woman on top of him. He felt much temporary discomfort, but he soon recovered, and paid little attention to his accident until the following spring when he began to have pains in his legs and chilly sensations and darting pains in his body. He never felt quite the same as before his fall, however. The feet became numb and he felt as if something were tied about his waist. After numbness and pain in the legs they began to grow weak. Later on the urine began to trouble him, he had some trouble in passing it, and later he could not retain it, there was constant dribbling. He found it very hard to walk without a cane or to go down stairs. The arms for a time were sore and painful. He slept poorly, he had some headache and vertigo, the memory was poor, he could not

¹ Read before the Boston Medico-Psychological Association, January 21, 1894.

see to read quite so well unless he used glasses. The appetite was fair, the bowels somewhat costive.

The man was well-developed and nourished. He walked with difficulty, taking short, unsteady steps, and dragging his feet. The right pupil was irregular in shape and somewhat larger than the left; both reacted readily to light and accommodation. The field of vision, as tested by the fingers, was not contracted. The hands and arms were strong and their movements were not ataxic. The sensibility to pain, touch, and temperature was everywhere good. There was some tenderness of the calves. The legs were weak, especially the left, abduction and extension being most impaired. There was a distinct tonic spasm of the quadriceps. On standing with the eyes closed he swayed very much and fell backwards. The skin reflexes were normal, the knee-jerks were much exaggerated, and there was ankle clonus in the right leg. There was no speech defect and no sign of mental impairment. Examination of the chest and back was negative.

The second case which I wish to report, John O'K, is also a butler, aged thirty-three and married. His previous history is not very important. Twenty years ago he had rheumatic fever from which he made a good recovery. Seven years ago he had a sore on the penis coming on three or four days after intercourse with his wife; a year later he contracted a similar sore under like conditions; and a year after that a third sore. He denies any secondary symptoms, and the sores healed promptly. It may be that one of these sores was syphilitic, but the evidence is certainly unsatisfactory.

He came under my observation in March, 1892. In September, 1891, he was helping to carry a tub of ice upstairs, when his foot slipped and he fell over the tub, the edge of the tub striking his right flank and abdomen from the crest of the ilium round to the navel. It knocked his breath out for a minute or two, but he got his wind again in a few minutes and continued his work. He kept at work for a week, but the pain in the abdomen became so bad that he had to give up, and for five or six weeks he did nothing until he entered the hospital.

In the hospital he complained much of abdominal He vomited constantly; his right leg was paralyzed, his left leg was weak, and there was anæsthesia on the anterior portion of the left leg below the knee. The knee-jerks were increased. He also had incontinence of urine and feces. Ten days after he entered the hospital he could move the right leg a little, but he complained of cramps in it. In another week he had gained still more. He could then move the right leg feebly in all directions, and the sensibility had returned in the left leg; but either his sensory conduction or the mental process was slow, for he responded to the test very slowly. The rectal sensibility was imperfect. He often thought he had passed feces when he had not. He could hold his water a little better, but there was incontinence as soon as the amount of urine reached an ounce. The vomiting ceased, and he gradually improved, until he could sit up and walk about. He had fair control of the legs, and his knee-jerks were reported as normal.

After a stay of about five weeks in the hospital he was discharged at his own request, and since then he had been an out-patient, and his condition had been gradually growing worse. He complained when I the absence of any striking cerebral symptoms and of first saw him of pain in the right side going down the any degenerative reactions make this clear.

outer side of the right leg. For a week he had had some pain in the shoulders. The right leg was weak and numb, and the left leg was also growing weak. They both felt very shaky when he walked. The urinary symptoms persisted; at times it was very hard to make water, at times there was dribbling after passing it, and at times the demand was so imperative that he would wet himself before he could get to the closet. The bowels remained obstinately constipated.

Beyond these symptoms there was little else of importance. He had no headache, he slept fairly, his mind was clear, his memory good, and, except for the "physiological melancholia" which was to be expected considering his long illness and the gloomy outlook before him, there were no cerebral symptoms. When talking with him once he began to shed tears, but that, under the circumstances, can hardly be considered as evidence of great emotional instability. The vomit-

ing had ceased, and his appetite was fair.

He was well developed, but rather pale and thin, and his expression was somewhat sad. The left eye had a cataract, the vision in the right eye was poor, 30. The movements of the pupils and eyes and the visual field were normal. The sensibility of the upper part of the body was normal. There was a slight tremor of the hands, increased on voluntary movements and their strength was below the average, the grip being 22 Kg. Examination of the chest revealed nothing remarkable; the pulse was 84, soft and full. The back was held stiff, and it was kept stiff on bending, and all movements were slow, causing pain in the back and right flank. There was some tenderness of the lumbar muscles, especially on the right, and still greater tenderness over the right flank, where pressure caused an increase in the pulse-rate. The vertebral column showed nothing remarkable.

The gait was slow, stiff, and unsteady, and he limped on the right leg, which he favored distinctly, saying that it caused pain to put much weight on it. Both legs were distinctly weak, especially the right leg, all movements being affected. He could stoop and raise himself on the left leg, flexing the leg at the knee, but he could not do this on the right. He felt a light touch everywhere on the legs, and the pain and temperature senses were not much altered, but all forms of sensation seemed to him less distinct on the outer side of the right leg. Fifteen centimetres above the upper border of the patella the right leg was two centimetres smaller than the left, but the electrical reactions were unaffected. The sense of motion and the sense of position were normal. The knee-jerks were exaggerated, the right being most marked; there was front tap contraction and a tendency to patellar clonus in the right leg but not in the left. There was no ankle clonus and the skin reflexes were normal. He swayed distinctly with the eyes closed.

The question of simulation in these two cases may be at once excluded. In neither case was there any question of damages, both were poor men dependent on their own exertions for their support, and both came to the hospital in the hope of obtaining relief. The symptoms point distinctly to some disturbance of the spinal cord — the paresis and spastic condition of the legs, the bladder symptoms, the sensory disturbances, the girdle-feeling, the inability to stand with the eyes shut, and the exaggerated reflexes, together with

The influence of trauma in the first case may be disputed, but it certainly cannot be denied, since the man never felt quite the same after it up to the time of the development of more serious symptoms. In the second case the symptoms may be referred definitely to the trauma.

In both cases syphilis must be regarded as extremely doubtful; the absolute denial in the first case, and the very doubtful nature of the sores in the second, render it highly improbable. In the second case, also, antisyphilitic remedies were of no avail.

Pantzer 11 has reported a case with somewhat similar symptoms, associated with fracture and displacement of the laminæ, relieved completely by laminectomy. In the absence of any discoverable vertebral changes such a condition seems improbable in these cases.

The very gradual onset of the symptoms in the first case renders the diagnosis of spinal meningeal hemorrhage most improbable. The partial recovery and the greater severity of the earlier symptoms in the second case might suggest a hemorrhage, but we must bear in mind that the symptoms did not develop for over a week and that there were no pronounced root symptoms or symptoms of a focal lesion of the cord, and no sudden pain or muscular spasm. In both cases the symptoms suggest changes in the pyramidal tracts, and I am inclined to the belief that in both we have to do with a degenerative process in the cord itself. In the absence of more definite data, however, support for that belief must be sought in the record of other cases.

Schmaus, in the paper to which I have already referred, and in a subsequent communication,12 reports certain cases where the autopsies showed changes similar to those produced experimentally in rabbits, foci of softening, swelling and degeneration of axis cylinders, degeneration of ganglion cells, fascicular degeneration, especially in the lateral tract and not secondary to other lesions, occasionally gliosis. In one case there was a hemorrhage which was apparently of recent date and was regarded as secondary to the softening. In the majority of cases the vertebral canal was intact. These changes in the lateral columns recall the degeneration found in the same region by Edes 18 ten years ago. In a previous paper 14 I have cited further evidence bearing upon this point.

Gowers 15 reports a case which, according to Watson, must be a myth. "A lady was severely shaken in a railway collison. She seemed, immediately after the accident, to have suffered no injury, but in a few days paraplegia developed, and from its consequences she died six weeks after the accident. Throughout the dorsal region of the cord I found indications of subacute myelitis, chiefly in the white columns, varying in its extent in different regions, but in most parts considerable in the pyramidal tracts.'

Gowers thinks that "in the face of such a case as this, it is superfluous to discuss the question whether or not the cord can suffer concussion." The evidence seems clear from such cases that we may have changes

H. O. Pantzer: Two Cases of Laminectomy, New York Medical Journal, August 26, 1893.
 H. Schmaus: Zur Casnistik und Pathologischen Anatomie der Rückenmarks erschülterung, Archiv für klin. Chirurgie, xiii, 112,

1891.

13 R. T. Edes: The somewhat frequent Occurrence of Degeneration of the Postero-lateral Columns of the Spinal Cord in so-called Spinal Concursion, Boston Medical and Surgical Journal, September 21,

P. C. Knapp: Art. cit.
 P. C. Knapp: Art. cit.
 Gowers: A Manual of Diseases of the Nervous System, 2d ed., i,

in the cord, without hemorrhage, fracture or direct crushing, of gradual onset and producing grave results. I have omitted to cite cases presenting the symptoms of ordinary acute myelitis, coming on soon after an injury, where no evidence of fracture or crush of the cord can be obtained.

There is vet another class of cases which Page and Watson ignore, yet where, according to all the knowledge we have of nervous pathology we must hold that the injury has given rise to changes of the most gradual and insidious onset, which begin with the most minute alterations, probably not much greater than those found by Hodge in fatigued cells, where the symptoms do not develop until long after the injury, and where the progress is gradual yet persistent to a fatal termination. I refer to the cases of tabes and spinal progressive muscular atrophy of traumatic origin. Both are, of course, rare, but trauma may be the sole discoverable cause of tabes according to Erb, and traumatic muscular atrophy is probably more common. Not long ago I reported 16 a case of progressive spinal muscular atrophy which gradually developed after a fall on the elbow. There may have been some neuritis at first; at any rate the arm was very painful, but the atrophy extended and bulbar symptoms finally developed. Such cases prove conclusively that the cord may be affected by injury where there is no gross lesion at the time and where the symptoms are not of immediate onset.

Finally, we have the cases which Page and Watson accept, where there is spinal hemorrhage, fracture of the vertebræ, crushing of the cord, etc., which I need not cite.

From the evidence thus collected it becomes clear that the position taken by Watson and Page is untenable. There are cases where the symptoms are in large part if not entirely due to disturbances of the spinal cord, and where the cerebral and psychical factors may be eliminated. Changes occur in the cord from injury where there is no fracture or dislocation of the vertebræ, no crushing of the cord, no spinal hemorrhage, and where the vertebral canal is intact. Such changes, furthermore, may be of gradual onset, and symptoms may not develop for some time after the As we know that severe cases occur with injury. marked lesions in the cord, post-mortem, it is only fair to suppose that milder cases may also occur where there are less marked lesions in the cord which either recover or persist, causing partial disability without a fatal termination.

PUERPERAL ECLAMPSIA: A REPORT OF THREE CASES.

BY H. D. ARNOLD, M.D., ROXBURY, MASS.

Or the three cases reported in this paper, the first occurred in my private practice, and the other two at the Boston Lying-in Hospital during my service as house-officer. I am indebted to Dr. C. M. Green, in whose service these two cases occurred, for permission to report them, thus adding materially to the interest of the paper.

All three of the patients were primiparæ. The first case is one of post-partum eclampsia, with recovery. The second case is one of ante-partem eclampsia occurring about the end of the sixth month of pregnancy.

¹⁶ P. C. Knapp: Hereditary and Traumatic Motor Tabes, Boston Medical and Surgical Journal, October 1, 1891.

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Labor came on without interference, and the child was born alive, but lived only a few minutes, as it was premature. The mother made a good recovery. In the third case the patient was in labor when brought to the hospital. She had had sixteen convulsions already, and was in a very weak condition. A living child was delivered after the twentieth convulsion, and survived; but the mother died later, having had twenty-four convulsions in all. The chief interest in these cases centres in the treatment, which will be reported in

In discussing the treatment of a disease like puerperal eclampsia, about the nature of which divergent views are held by the profession, it seems important that the view of the physician treating a case should be clearly understood. The more generally accepted view is that the eclampsia is due to the failure of the kidneys to perform their function. Owing to this failure, there remains in the circulation some substance, otherwise eliminated, which acts as a poison — its manifestations coming through the nervous system. Pregnancy is in some way the cause of this failure of elimination by the kidneys. Thus much is common to all views of eclampsia, except for those rarer cases (if they exist) where eclampsia is due to reflex irritation. If such cases do exist, and the kidneys are fulfilling their whole function of elimination, it would be conducive to clear reasoning to have these rare cases set apart in a class by themselves, so as not to obscure the consideration of the common form of eclampsia.

When we come to the question of the nature of this substance which acts as a poison, and of the way in which pregnancy causes renal inadequacy, we touch the points on which authorities differ. The view that the substance which acts as a poison is a normal product of the cell-life of the individual, perhaps some form of leucomaine, and that in a healthy person it is only the adequate elimination by the kidneys which prevents the constant accumulation of this poison, seems to me the most probable hypothesis in view of recent investigations. In like manner it seems probable that the pregnant uterus affects the kidneys through pressure upon the ureters. But these views do not carry in my mind the same weight as the fact of the existence of some poisonous substance in the blood as a cause of the convulsions. That is the essential fact, from a clinical standpoint. Puerperal eclampsia is a toxemia. What the poison is, and how it gets there, are matters of minor importance compared with the problem of getting rid of it. I emphasize this, because I think in some cases too much attention in treatment is paid to the uterus and kidneys, and the treatment of the general condition is not prompt or energetic enough. The removal of the child may give no immediate relief where such relief is necessary, and the woman may die before we get her kidneys into working order if we depend chiefly upon them for elimination.

How shall we get rid of the poison? Obviously we must in some way secure its elimination from the body. In some cases this may be accomplished through the ordinary channel of the kidneys; but usually we must call in the skin and gastro-intestinal tract as auxillaries, and often we must depend entirely on this vicarious elimination, and leave the kidneys entirely out of our calculations. Could we estimate accurately the amount of poison to be eliminated and the exact condition of and reasons why the child was very unwelcome. She the secretory function of the kidneys, I believe we had taken a violent dislike to it, was opposed to nurs-

treat the different classes quite differently. A very mild case of post-partum eclampsia presents a different problem from that of a severe case of ante-partum eclampsia. In the former case, the original cause of the trouble (the child in the womb) has disappeared. The kidneys are freed from obstruction and will shortly resume their function fully. Let us suppose that the kidneys are very slightly affected, there is an accumution of only a small amount of poison in the blood, the patient is easily susceptible and her nervous system has lost a good deal of its resistant power through a tedious labor. She has a mild convulsion, as a result of slight poisoning. Such a case may be successfully treated by using a sedative to render the nervous system less susceptible to the effect of the poison and waiting for nature to eliminate the poison by the rapidly improving action of the kidneys. The difficulty lies in the recognition of just such a case; and the first case reported in this paper shows that we must always be ready to change our tactics completely and push vigorous treatment if necessary. As a general rule, it is not wise to place much reliance on the kidneys in the immediate treatment of eclampsia. The safer plan is to supplement the action of the kidneys with more or less diaphoresis and catharsis, according to the severity of the case, and always to be ready to act temporarily as if the woman had no kidneys. I believe that the successful treatment of eclampsia depends more upon an intelligent understanding of the severity of the case than upon the adoption of any routine treatment, however good it may be.

Other questions of treatment arise, and important ones, too, but it is not necessary to discuss them at this point. In seeking to emphasize one or two aspects of the treatment, I do not wish to be understood as underestimating the importance of other measures. My object is not to give an exhaustive discussion of the treatment, but rather to explain the line of treatment which is common to the following cases.

CASE I. Primipara, married, eighteen years of age. Post-partum eclampsia after a labor at full term.

When first seen by me she was in labor, with the os about the size of a silver dollar. This was at 3 P. M., September 1, 1892. She had had irregular pains all day. The labor was uneventful, except that the first stage was tedious and the patient showed a very nervous temperament. Labor ended at 2.15 A. M., September 2d, by the birth of a female child weighing seven pounds.

Eleven hours later I called again. The patient was apparently all right. She had not slept, however, although she had had little sleep for forty-eight hours. She complained of headache and was rather restless, but this was not unexpected on account of her temperament. About two hours previous to my visit she passed nearly a pint of urine. It was high-colored, but otherwise apparently normal. During the labor she had passed a satisfactory amount of urine. She was given a dose of bromide of sodium before I left, and the nurse had orders to repeat it if she did not sleep.

An hour later I was summoned on account of a convulsion. This occurred twelve hours after delivery. I was prepared for a nervous explosion of some kind. With a nervous temperament there were family troubles should divide our cases of eclampsia into classes, and ing it, and was greatly disturbed by the urging of the

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family and nurse that she should nurse it. Shortly before the convulsion she had complained of pain in the abdomen, but it had been over the uterus and not in the epigastrium, and she was quickly relieved by hot applications. There had been no other symptoms except the headache and nervousness before mentioned.

At the time of my arrival she was fully conscious and was quiet. Her mind was perfectly clear. The convulsion was of very short duration, and the description which I obtained was not characteristic of any particular form. There was no cedema of legs or feet. She said she had worn during the latter part of pregnancy the same shoes as usual without discomfort. She was the picture of health, and could remember no sickness.

I decided that the convulsion was probably hysterical in character, on account of the secretion of urine and the absence of of confirmatory evidence of eclampsia, and felt so sure of it that I did not catheterize her for a specimen of urine, fearing that she might get too much worked up by so doing. Subsequent events proved that I was wrong. However, it may be remarked in passing, to show that my view was not unreasonable, that about a week later (when eclampsia was out of the question) she had an hysterical attack not unlike this but more violent, and that she continued to be excited and verged on mania for two days. The patient was given another dose of bromide, and was soon asleep.

The second convulsion occurred at 6.30 P. M., four hours after the first. She awoke from a quiet sleep, and passed almost immediately into this convulsion. She was catheterized, and more than half a pint of urine was obtained - the secretion of seven hours. It was darker in color than that passed at noon, and contained an abundance of albumin. Recognizing the seriousness of the case, I advised a consultation and Dr. Clement responded to the call.

It was thought that this would be a favorable case to treat by the subcutaneous injection of morphine to check the convulsions. The convulsions had been rather mild. The patient quickly regained consciousness, and was perfectly clear mentally between the attacks. She had secreted one and one half pints of urine in sixteen hours, and it seemed probable that the kidneys would quickly resume their normal excretion. The skin was moist, and it seemed sufficient to favor perspiration by blankets and heaters. In addition, she was to have elaterium to favor the action of the bowels. The prognosis seemed, on the whole, favorable.

8 P. M., September 2d. Morphine, gr. 1, subcutaneous injection. She soon fell into a deep sleep. 9.30 P. M. Third convulsion. I was not present,

but arrived shortly afterwards. She passed into this convulsion from a deep sleep due to morphine, without This couvulsion was much more severe than the previous ones and lasted longer. I found her at 9.45 extremely drowsy from the morphine, not easily roused, and with pupils well contracted.

9.50 P. M. Elsterium, gr. 1.

10.30 P. M. Elaterium, gr. 1. The effect of the morphine is not quite so profound and she was given a subcutaneous injection of morphine, one-eighth of a grain. This produced complete narcosis. Pulse 84.

nurse said it was longer than the last one, but not so violent. It was probably modified by the morphine. The recovery from this convulsion was decidedly slower than before. The pulse during the convulsion was 96. The temperature in axilla immediately afterwards was 99.4°.

12.30 A. M., September 3d. Elaterium, gr. 2. She could be aroused to swallow with the greatest difficulty, and probably could take nothing more for some while, as the stupor was increasing. She was catheterized, and four ounces of dark urine were obtained - secreted in five hours. The situation was now grave in the extreme. Convulsions had continued in spite of the morphine - in fact, they came oftener. The interval between the first two convulsions was four hours, the next interval was three hours and the last interval two and one-half hours. The succeeding stupor was becoming more marked, and with the aid of morphine threatened to be continuous. The amount of urine secreted was diminishing instead of increasing, and was of a worse character. The skin had become dry and harsh. The patient's countenance had changed decidedly for the worse. I left to get a reliable croton oil and some fresh pilocarpine for subcutaneous use.

1.80 A. M. Pilocarpine, gr. 1, by subcutaneous in-Five minutes later she vomited a small amount of green, watery vomitus. At 1.40 she was sweating profusely. Fresh heaters and blankets were applied.

1.40 A. M. Croton oil, two drops in some olive oil, on the tongue. In five minutes there was more green, watery vomitus.

2.10 A. M. Croton oil repeated. Vomited imme diately.

2.30 A. M. This was the time when another convulsion was due, if it came after the same interval as the last one. I could not help feeling anxious, although the patient was coming out from her stupor somewhat, and her countenance looked decidedly better.

2.35 A. M. Pilocarpine, gr. 10, by subcutaneous injection. She was still perspiring, but not freely. In five minutes there was profuse perspiration; and between this and 3 A. M. she vomited several times profusely.

3.40 A. M. Owing to the elimination by perspiration and vomiting, patient had improved so much that she could be roused to swallow. She was given elaterium, gr. 3

5.20 A. M. First dejection. This was thin, fecal, and moderate in amount. This was seven and onehalf hours since a cathartic was first given. During this time she took six-fifths of a grain of elaterium, which was apparently retained, and two doses of croton oil, which were vomited.

At 5.45 she vomited copiously. Three dejections followed before 8 o'clock, and two more before 10.30 A. M. This made six dejections.

The patient was now entirely conscious and her mind clear and bright. She had no memory of the night. There was no headache. Her pulse was good. Four ounces of urine were drawn by catheter. This was the secretion of ten hours, and it showed that the kidneys were of little use as yet.

Patient was ordered thirty grains of compound jalap 12 midnight. Fourth convulsion. She passed into powder at 12, and at 1 P. M. cream-of-tartar water, ad. this from deep narcosis. This was the first of the con- lib. Her diet was plain milk. At 3 P. M. there was vulsions which I witnessed. It lasted eight minutes. another dejection. By this time threatening symptoms The movements were not excessively violent. The had set in again. She was getting decidedly dull and had a severe headache. Evidently the elimination of the poison was not keeping abreast of its formation.

3.30 P. M. Elaterium, gr. 3. She continued the cream-of-tartar water in large amounts. She was now given ten grains of chloral hydrate to guard against convulsions. This was repeated at 4.30 and 6.15 P. M. Still her headache grew worse.

At 4 and 5 P. M. she had dejections. At 5.45 P. M. she was given one-fifth of a grain of elaterium. Four dejections followed before 8 P. M. She also passed a few ounces of urine, with one dejection. About five ounces of urine were drawn by catheter at 8 P. M., which was of a lighter color and showed evident improvement in the action of the kidneys.

Notwithstanding this her headache grew worse and worse. She was restless in spite of the chloral, and she could not sleep. Her skin had been moist and she was perspiring at 5.30 P. M., but her skin was now getting dry and harsh again. Pulse 84. Symptoms grew worse until 9 P. M. She was then given onetenth of a grain of pilocarpine subcutaneously. This was followed by vomiting and profuse perspiration. A dejection followed at 10 P. M. and 1 A. M. Elaterium was given, in the dose of one-fifth of a grain, at 2, 5 and 7.15 A. M. There were three dejections between 6 and 9 A. M.

It was now the morning of the second day after the convulsions. She was again clear in her mind. There was no headache. Pulse 96. Temperature normal. The kidneys were acting much better. The urine was lighter colored and was passed in fair amounts. amount was not accurately determined, for part was passed with her dejections.

From this time on there was steady improvement through convalescence. The bowels were kept freely open for two or three days, by compound jalap powder. Acetate of potash was substituted for cream-of-tartar water as a diuretic. The urine improved steadily. After a few days there was only a trace of albumin, and on the twentieth day after confinement, the albumin had entirely disappeared.

The feature of this case which is to me of most interest is the threatened recurrence of the eclampsia on the second night after complete relief for some hours during the day. This was apparently due to the slowness of the kidneys in resuming their functions and the failure of elimination to keep pace with the continued formation of the poison in the system. I felt obliged to use pilocarpine again and to resort to brisk The pilocarpine at no time in the case caused salivation to any degree nor any accumulation of secretion in the bronchi.

CASE II. Primipara, married, twenty-two years of age. Ante-partum eclampsia between the sixth and seventh month of pregnancy. This patient entered the Boston Lying-in Hospital February 12, 1890.

For two weeks previous to this she had had headaches. Two days before her entrance to the hospital she complained of a severe, shooting pain in the epi-gastrium and the right iliac region. There was considerable nausea, but no vomiting. She complained of a "sick headache." On the day before entrance to the hospital there was a good deal of vomiting and retching. During these two days she was under a physician's care, and was treated symptomatically for vomiting, pain, etc.

Between midnight and seven o'clock in the morning

vulsions. The doctor saw her first at 7.45 A. M. was partially unconscious, but could be roused if spoken to sharply. Four ounces of urine drawn by catheter showed a large amount of albumin. Convulsions occurred at 8.20 and 9 o'clock. Ether was administered. Later she was brought to the hospital in a hack, lightly etherized. She was admitted about 11.30 A. M., February 12th.

At that time she was unconscious, and could not be thoroughly aroused. She was restless, resisted any interference, and needed restraint. There was some ædema of the feet, slight ædema of the face, but none of the hands. Patient could not swallow. ounces of urine were obtained by catheter. Albumin was present in abundance - more than one per cent. The sediment showed numerous casts of all kinds, blood globules and renal epithelium.

Dr. C. M. Green was sent for. It was decided not to attempt to bring on labor. Labor had not begun. For the mother, a forced labor would be detrimental, and delivery did not promise immediate relief. As for the child, its chances were almost too small to consider. There was just a possibility that labor might not come on if the patient were let alone. If labor came on itself the child might be born alive, but its chances of surviving would be exceedingly poor. In a forced labor it would probably be still-born. No good and a probable harm would attend an attempt to bring on labor. It was decided to rely entirely on vicarious elimination through the skin and bowels.

1.10 P. M., February 12th. Croton oil: three drops were given in olive oil by rectum, as the patient could not swallow.

1.15 P. M. Pilocarpine: subcutaneous injection of one-quarter of a grain. Profuse perspiration in five minutes. There was marked temporary salivation. Blankets and heaters were applied, and a profuse perspiration lasted more than an hour. Perspiration lasted to a less degree for a longer time, and the pilocarpine was not repeated until the end of two and onehalf hours.

1.30 P. M. A severe, typical convulsion. Ether was applied, but did not shorten the attack.

2.10 P. M. Croton oil: two drops were placed on the tongue, diluted with olive oil. One hour had now elapsed since the croton oil was given by rectum.

2.25 P. M. Turpentine enema, without result. 8.10 P. M. Chloral: thirty grains by rectum, as patient is very restless. The pulse is 120, of good strength, but not full or bounding.

3.30 P. M. Profuse vomiting of greenish, watery material.

3.45 P. M. Pilocarpine: subcutaneous injection of one-sixth of a grain. It is two hours and a half since the first injection, and the skin is not very moist.

5 P. M. Croton oil: three drops by rectum.

5.30 P. M. Catheterized. Only one ounce of urine was obtained, of the same character as before.

5.45 P. M. Her condition had improved enough for her to be able to swallow. Elaterium, gr. 1, by mouth.

6.30 P. M. Turpentine enema.

7 P. M. A large, loose, watery dejection. was six hours from the beginning of treatment.

7.15 P. M. Pilocarpine: one-sixth of a grain subcutaneously. It was now three and one-half hours since the last injection, and it was desired to continue of the day she came to the hospital she had four con- the elimination by the skin for some time yet. Between this time and eight the next morning the patient took forty ounces of cream-of-tartar water and about half a pint of milk. To the milk was added two drachms of brandy every two hours after 8 P. M., as the pulse was weak.

8 P. M. Turpentine enema, without result.

10 P. M. Elaterium, gr. 1. This was repeated at 11 P. M., at midnight and at 1 A. M.

12.30 A. M., February 13th. A turpentine enema gave a small dejection. One ounce of urine, drawn by catheter, had a better color, and contained only onehalf per cent. of albumin. The kidneys have secreted only about an ounce of urine in seven hours.

At midnight the patient was found to be in labor, with the os dilated to about half-an-inch in diameter.

4.30 A. M. Profuse vomiting began, and lasted at intervals for one and one-half hours.

4.30 A. M. Large watery dejection.

5 A. M. Large watery dejection.

Patient had now (5 A. M.) been under treatment for sixteen hours. Her condition was much improved. She was still unconscious, but was quiet, and breathed quietly and easily. Her countenance looked much better. Pulse was 100 and of good strength. Drugs were given for twelve hours.

Labor progressed easily during the day, and the child was born at 4.40 P. M. It was alive, but was premature, and lived only a short time.

In the meantime (at 8.30 A. M.) nine ouuces of urine (secreted in eight hours) were drawn, showing one-fourth to one-half per cent. of albumin and a sediment with fewer casts and blood-globules. A number of loose dejections occurred during the day.

In the evening she began to pass urine in bed involuntarily. At 10 P. M. she could answer questions in a semi-intelligent manner when aroused.

The next morning, February 14th, she was entirely conscious. Steady improvement followed. She was discharged on the fifteenth day after entrance to the hospital. She was well, except for a slight trace of albumin in the urine. The urine contained no casts.

Summary. — The child and the uterus were left entirely to nature. A quiet, easy labor gave a living child, which died because it was so premature (about six and a half months). Entire dependence was placed upon vicarious elimination. The patient was too restless to take a hot-air bath if it had been de-

Elimination was obtained first through the skin by the aid of pilocarpine. The first dose was one quarter of a grain, followed in two and one-half hours by one-sixth of a grain, and again in three and one-half hours by one-sixth of a grain. In all, the action of pilocarpine was continued about nine hours. Vomiting aided in elimination at the end of two and one-half in less than five minutes.

At the end of four and one-half hours she could swallow, and was given one-fifth of a grain of elaterium. She had previously had croton oil twice by rectum and once by mouth, and had had two enemata. The first dejection occurred at the end of six hours. The second, a small one, at the end of eleven and onesixteen hours after treatment began, but were un-

viously. In all, one grain of elaterium was used, besides croton oil and enemata.

There were six convulsions before entrance to the

hospital and one afterwards, seven in all.

CASE III. Primipara, single, nineteen years of age. She was at full term, but whether the convulsions preceded the onset of labor or not is not known. She was admitted to the Boston Lying-in Hospital March 29, 1890.

The first convulsion occurred about 5.30 on that morning. She recovered consciousness, and had a second convulsion about 6 A. M. She was never fully conscious after this. Before reaching the hospital at 2.45 P. M. she had had sixteen convulsions.

At the time of her arrival she was unconscious; her breathing was deep, but not stertorous; her pulse was 144 and weak; the abdomen was in size that of full term; and the os was half dilated.

The seventeenth convulsion followed while preparations were being made to catheterize her. The pulse ran up to 210 during the convulsion. Ether was applied immediately as soon as the convulsion began. No urine was obtained; the bladder was empty, and it was not known when she passed urine last. The ether was continued, and I immediately set about the manual dilatation of the os. Dr. Green had been notified by the telephone in the meantime.

3.02 P. M. Eighteenth convulsion. Pulse 200.

3.08 р. м.

Nineteenth convulsion. Pulse 200. The os is fully dilated. Pulse 168. 3.12 р. м.

3.14 р. м. Twentieth convulsion, during which the membranes ruptured.

3.18 p. m. Forceps were applied by Dr. Green, who had arrived a few minutes before.

3.25 P. M. The child was delivered. This was forty minutes from the time the carriage reached the hospital door. The child gasped, and was finally coaxed into living, after twenty convulsions.

The woman's pulse was 180 after the birth of the child, and 210 after the delivery of the placenta.

3.40 P. M. Hot-air bath. As the pulse was 210 and weak, she was given subcutaneously six syringefuls of brandy. The pulse improved.

3.55 P. M. Croton oil: two drops in oil on the

tongue.

4.10 P. M. Pilocarpine, gr. 10, subcutaneously. The reason for this was that the hot-air bath alone had not caused any perspiration after being in working order for twenty minutes. The dangers of using pilocarpine with the patient in such poor condition were fully recognized. At the same time her condition demanded speedy and effectual relief even by desperate measures. Under the dose of one-tenth of a grain of pilocarpine and the heat, the perspiration was profuse There had been some ædema of the lungs at the time of her entrance to hospital. This was somewhat increased by the pilocarpine and there was some salivation, but both disappeared in a short time. The pulse was not materially affected in rate or strength, running from 180 to 200.

The twenty-first convulsion occurred about the same half hours, after four-fifths of a grain of elaterium and time that the pilocarpine was given, 4.10 p. m. It was an enema. The third and fourth dejections were a short and slight one. The twenty-second convulsion copious ones. They came fifteen and one-half and at 4.40 p. m., however, was a severe one. The pulse became weaker and the subcutaneous stimulation, doubtedly due to the elaterium given between 10 P. M. which had been given from to time of brandy and and 1 A. M. — that is, from six to four hours pre-digitalis, was increased. Patient rallied; and at 5 P. M.

was breathing easier, had a better pulse and was still perspiring freely.

5.25 P. M. Twenty-third convulsion.

6 P. M. Twenty-fourth convulsion.

The pulse again became very weak, rate 180. It rallied, however, under stimulation; and the condition improved enough so that she could swallow at 7.25 P. M. She was given one-fifth of a grain of elaterium. She also took a little brandy by mouth. The improvement was short, however, and she began to fail. By 8.30 P. M. she failed to respond to stimulants, and died at 9.35 P. M., March 29th. The baby lived and did well.

This case was almost hopeless from the beginning of our care at the hospital. She had had sixteen convulsions previously, and four followed in the next half-hour before delivery could be accomplished. The pulse ranged from 144 to 160 at the start, running up to 210 during a convulsion; and it was weak. There was some pulmonary cedema. And yet the patient rallied enough to be able to swallow. This is rather more surprising than that she died; and it is also interesting that the child was still alive and survived after twenty convulsions.

The cases here reported are too few in number to be in themselves the basis of any general conclusions regarding treatment. A number of interesting questions might be raised which would involve a general discussion of treatment, but that is not the object of this paper. Vicarious elimination is the feature common to all three cases; and I wish to speak of one or two points in this connection. I was surprised at the difficulty experienced in producing catharsis, and at the length of time which elapsed before the bowels moved. Elimination by the bowels is very valuable, but is not immediately available as a rule.

Elimination by the skin is, as a rule, more quickly obtained. For this purpose I prefer the hot pack to the hot-air bath. This is often enough. If, however, the perspiration does not come quickly enough or in large enough quantities, What shall we do? we use pilocarpine? It was used in all three of these cases - with marked benefit in the first two cases, and it seemed to me to be of some aid in the third. In the last case I am quite confident it did no harm; and I feel that if the same line of treatment could have been begun two hours earlier, we could have saved the mother's life, but she came to the hospital too late.

Professor Hirst, in "Hare's System of Practical Therapeutics," Vol III, p. 870, says: "Pilocarpine seemed at one time an ideal remedy to secure diaphoresis in eclamptic cases, but it has lately fallen into welldeserved disrepute. It much increases the danger of pulmonary ædema and is too profound a depressant. It is no longer employed by experienced and educated obstetricians." And three pages later he adds: "Pilocarpine is simply mentioned to be condemned."

It seems to me that this condemnation is rather too severe. I do not advocate pilocarpine in all cases, and I should try to get along without it if suitable action of the skin could be obtained by a hot pack. But I think it still has a place in the treatment of eclampsia. If, as in the first case reported in this paper, I felt the case urgently demanded a profuse perspiration as soon as possible, then I think I should be justified in using pilocarpine in a suitable dose. is, of course, a powerful depressant, but so are other drugs which are advocated for eclampsia, such as vera-

trum viride, chloral in large doses, and chloroform (for convulsions). If used intelligently and in small enough dose, I believe there need be no serious pulmonary cedema or depression of the heart. Combined with moist heat externally a small dose works admirably. The function of pilocarpine is only a temporary one, to bridge over the period until elimination by some other channel than the skin has been established.

Medical Progress.

RECENT PROGRESS IN GENITO-URINARY SURGERY.

BY FRANCIS S. WATSON, M.D.

CASTRATION FOR THE TREATMENT OF HYPERTROPHY OF THE PROSTATE.

AT the third triennial meeting of the Congress of American Physicians and Surgeons, before the Section of the American Association of Genito-Urinary Surgeons, May 80, 1894, Prof. J. Wm. White, of Philadelphia, read an interesting paper on this subject. Professor White had already published 1 the results of his observations upon the effect of castration on the prostates of dogs, in which it was shown that atrophy of the prostate followed the operation invariably and within very short periods of time, and recalled to notice the suggestive facts that the prostates of eunuchs are known to be small; and that Gruber and Caviale. when operating by lateral lithotomy for stone, had noticed that the prostate of a patient who had been previously castrated, was very small. He also referred to the supposed analogy between the prostate and the uterus, and to the effects of oöphorectomy upon the latter. In this first communication he made the suggestion that castration might be in the future successfully applied to the treatment of prostatic hypertrophy, to produce a diminution in the size of the organ.

In his paper, read as stated on May 30th, White urged definitely that castration be tried in appropriate cases with the view of bringing about atrophy of the enlarged prostate, and adduced the four successful results already obtained, in support of his proposition.

Of these four cases two were operated on by Frederik Ramm, of Christiania; 2 the first operation being in 1893 (April), and the second case on January 17. 1894. The third case was operated upon by a surgeon in Los Angeles, Cal. The fourth was a case of Dr. Fremont Smith's, in St. Augustine, Fla., in 1894.

In all of these cases marked atrophy of the prostate, attended with entire relief of all distressing urinary symptoms, followed castration within a short time; and the patients all recovered a satisfactory degree of health.

Ramm's conclusions with regard to the matter are as follows:

- (1) The prostate is a sexual organ.
- (2) It develops with or after puberty.
- (3) It retains its infantile size in cases of malformation of the sexual organs.
- (4) It shrinks in adults after castration.(5) This diminution in size begins at once after castration, and continues as time passes.
- Annals of Surgery, 1893, vol. xviii.
 Reported in the Central blatt für Chirurgie, April 28, 1894, no. 17.
 Reported in the Annals of Surgery for July, vol. xx, no. 1.

(5) The operation can be utilized in cases of urinary obstruction due to prostatic hypertrophy.

THE EFFECTS OF CHLOROFORM AND ETHER ON THE

Wanderlich reports his observations on the effect of chloroform and ether anæsthesia on the kidneys in 125 patients.4

There were five whose urines contained albumin previous to anæsthetization. These patients were etherized, in three there was an increase of albumin following the anæsthesia.

There were 13 cases in which albumin appeared for the first time in the urine after anæsthesia. these six were chloroformed and six etherized; and to one a mixed anæsthetic was administered. The albumin appeared in small quantities only, and disappeared in from one to three days.

Casts were present in 37 non-albuminous urines before the administration of an anæsthetic. observations, previously recorded, showed hyaline casts to be present in 30.9 per cent. of non-albuminous urines of men, granular casts in 1.8 per cent., and epithelial casts in 1.8 per cent.)

Wanderlich found casts in the urines of 24.6 per cent. of patients after etherization, these urines having been free from albumin and casts previous to etherization. After chloroform, casts were present in 34.8 per cent of the patients' urines which had been free from albumin or casts previous to the anæsthetic. These effects of the anæsthetics were found to be true of children as well as adults.

Wanderlich's conclusions are as follows: (1) An already existing albuminuria is often increased by ether, not by chloroform, anæsthesia; (2) Albuminuria may be produced by ether and chloroform - more often by the latter; (3) Casts appear oftener after chloroform than after ether anæsthesia.

These observations confirm those of Rindskopp, of Berlin, published in the Deutsche Medicinishe Wochenschrift, No. 40, 1893.

TRAUMATIC RUPTURE OF THE URETER, ETC.

Herbert W. Page (Cantab), F.R.C.S., begins an interesting article upon this subject with the report of a case, as follows:

September 24, 1892, a boy, five years of age, was knocked down by a light vehicle, the wheel of which passed over his abdomen. Within the next two days blood was seen in the urine on three different occasions - once in the form of a small clot, twice in small quantities mixed with the urine. There was tenderness over the cecum. Evening temperature 102°. There was no external sign of injury. bowels were emptied by an enema. The tenderness disappeared, and the temperature fell to normal; the urine was thereafter normal also. There was no evidence of any trouble for twenty days. The temperature then rose to 100°, three days later to 103°. Abdominal tenderness disappeared as before; and a well-defined swelling developed in the right iliac fossa, and gradually increased in size.

The urine remained normal (the daily quantities, however, were not noted).

The temperature continued at 103° for the next three days, and respiratory movements were impaired.

Beitrage zur Klinischer Chirurgie, Band xi, Heft 2, 1894. Annals of Surgery, May, 1894, p. 513.

On October 27th, thirty-six days after the injury, the abdomen was opened in the right linea semilunaris, over the swelling. Clear serous fluid flowed from the peritoneal cavity; and at once a soft fluctuating tumor, of the size of a large orange, bulged forward into the wound. This was incised; and forty ounces of fluid, containing some colorless clots of fibrin, were collected from it. This fluid contained urinary constituents (about one half of the bulk of the fluid was re ported to be urine). The right kidney was to all appearance normal, and no rent was found in the upper portion of the ureter, which was all that was exposed. The cyst was sutured to the abdominal wound and drained.

Daily measurements of the quantity of urine from the bladder showed that it rarely exceeded six ounces; it was acid; the specific gravity was 1.025; it was free from albumen and blood.

Three days after the operation the dressings were saturated with a fluid having a distinctly urinous odor, and which proved on examination to be urine. The patient did well for a few days, and then began to fail.

About four weeks after the first operation, nephrectomy was performed, through the original incision. The pelvis of the right kidney was distended and filled with purulent urine, and the kidney itself was greatly enlarged. The upper part of the ureter and the pelvis of the kidney were found to be intact. The remaining part of the ureter was not dissected out; and the assumption that it was ruptured somewhere below that portion is based on conjecture, to support which the author quotes these cases:

"Haviland reports a case of 'Obliteration of a ureter: abscess-like dilatation of calyces of kidney.' The patient had received an injury to the back five years before his death; and the above condition of ureter and kidney was assumed to have resulted from an injury to the ureter at time of accident.

" Pye Smith 7 reports a case of 'Stricture of the ureter and dilatation of the kidney, apparently of traumatic origin.'

"Mr. Poland s reports the case of a preguant woman who died six days after being crushed in a railway accident. The right ureter was found torn across, just

below the pelvis of the kidney.
"Soller describes a case of constricted ureter, with dilation above the joint of narrowing, in a man who nine years before received a severe blow over the left renal region, which was assumed to have been caused by the injury

"Dr. S. Coull McKenzie 10 reports the case of a cooly who died twenty-four hours after being crushed between two heavy trucks. There was no external evidence of injury. At the autopsy two small ruptures of the right ureter were found; the abdominal cavity contained two pints of blood mixed with urine; there was a general peritonitis, due to the extravasation of this fluid through the ruptures of the ureter; there were no bones broken."

The author then proceeds to the consideration of the possibility of rupture of the ureter, from an anatomical standpoint, and quotes Cabot 11 with regard to

⁶ Transactions of Pathological Society of London, vol. x.

⁷ Op. cit., vol. xxiii, 1872, p. 159.

⁸ Guy's Hospital Reports, vol. xiv, 1868, p. 85.

⁹ Lyon Medical, 1880, t. xxxv, p. 333.

¹⁰ Medico-Legal Experience in Calcutta, p. 98, E. and S. Livingstone, Edinburgh, 1891.

¹¹ American Journal of the Medical Sciences, January, 1892, vol. citi p. 43, at sec. ciii, p. 43, et seq.

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the relation of the peritoneum to the ureters, and especially with reference to the observation made by Cabot, namely, that the ureter is adherent to the peritoneum near the point at which the peritoneum is adherent to the spinal column. He also mentions the observations of Tuffier, 12 which shows that if the ureter is torn from its position in the cadaver, it always ruptures at this point.

The author continues by saying that whatever may be the mechanism of the rupture, he considers that there is ample evidence that the ureter may be ruptured by violence done to the abdominal wall.

He then passes on to the consideration of further clinical observations and means of treatment of this

injury as follows:

Stanley 18 reports the case of a boy, nine years old, who received a severe injury of the lower part of the abdomen. There resulted pain, ecchymosis and extensive subcutaneous suppuration. The pus was evacuated by puncture near the left sacro-iliac symphysis. Six weeks later a swelling appeared on the right side of the belly, reaching from the diaphragm to Poupart's ligament. This swelling was aspirated, and found to contain urine.

Mr. Barker's case.14 A child, three years and eight months old, was run over by a hansom and bruised on the right side of the abdomen. No serious symptoms developed, and the patient was discharged from the hospital fifteen days later. Four days afterward he returned, and a fluctuating swelling was seen in the abdomen. Aspiration showed the swelling to contain urine.

Mr. Godlee's case. 15 A girl, aged four, was run over by a cab twenty-four hours previous to admission to the hospital. There were pain, tenderness and considerable bruising in the left lumbar region and inguinal regions. A fortnight later tension was noticed in this locality. Soon afterward a large fluctuating tumor appeared in this place. Twenty-three days after the injury the swelling was aspirated, and a large quantity of urine withdrawn from it.

Mr. Allingham's case. 16 A boy, sixteen years old, received a blow on the abdomen. Here the symptoms were much more urgent, and a swelling on the left side of the abdomen was explored on the sixth

In this case Allingham opened the abdomen, and found a sausage-shaped tumor extending from the kidney down into the pelvis in the course of the ureter. The pelvis of the kidney was not distended. He punctured the tumor from the loin, and evacuated more than a pint of turbid urine. The abdominal wound healed rapidly. Drainage through the loin was maintained for six days; and in less than a month the patient was discharged well.

In Godlee's and Barker's cases nephrectomy was resorted to successfully after drainage had failed to

effect a cure.17

The characteristic symptom of the injury is, according to the author, the tardy appearance of an abdominal tumor containing urine in the course of one or the

12 On rupture of the kidney and ureter: Archives Générales de Medicine, 1889, vol. xx, p. 358.

13 Medico-Chirurgical Transactions, vol. xxvii, p. 11, 1844.

14 Lancet, 1885, vol. i, p. 95.

15 Clinical Society Transactions, vol. xx, p. 219.

16 British Medical Journal, 1891, vol. i, p. 699.

17 The author fails to record in any of these cases the discovery, or failure to discover, actually, the point of rupture of the ureter. The existence of a rupture of the ureter in Stanley's case seems by no means certain; in the others it seems highly probable.

other ureter. He advises drainage through the loin as in Allingham's case, and a subsequent nephrectomy of the kidney on the side of the injured ureter, in event of failure of drainage to cure.

A list of twenty authors and their writings on this subject is appended to Mr. Page's article.

ings extend from 1844 to the present time.

NEPHRITIS IN ITS SURGICAL ASPECTS.

Under the above title, Dr. E. L. Keyes 18 read an important paper before the Congress of American Physicians and Surgeons on May 31, 1894, at Washington. He considered only that form of pyelo-nephritis commonly called surgical kidney. He passes in review briefly the progressive demonstration of the etiological relation between microbic infection and renal suppuration, which he expresses tersely thus: "In the urinary tract, no microbes, no suppuration."

The methods of microbic invasion are summarized

(1) By propagation along the mucous membrane by damage done to the deep ureteral membrane. (Tubercle, cancer, stone, bruising, violence, erotic excitement, gonorrhæa, gouty congestion, enlarged prostate or spontaneously.)

(2) Introduction by the surgeon on his instruments.

(3) Bursting into the urinary tract of some ex-

traneous focus of suppuration.

(4) Transmission through the unbroken tissues from a neighboring focus of suppuration. (The bacterium commune may emigrate from the intestine to the bladder.)

(5) By descent from the blood through the kidney,

rarely.

The three factors which have been shown experimentally to be the agents in preparing suitable soil for effective microbic infection of the kidney are "overdistention, congestion and trauma.'

The author next compares these experimental conclusions with clinical experience, and finds that they

harmonize.

The following deductions are drawn from the review of the clinical data: (1) To use reasonable care in exploring a healthy bladder or in passing any instrument into it; (2) to use greater care if there be traumatism from stone, tumor, stricture, especially if the powers of the individual be weakened by age or disease; (3) to exercise every known precaution in exploring and manipulating instrumentally cases of dilated bladder in a fibriotic with enlarged ureters and damaged kidneys.

Prophylaxis is next considered. This is best obtained by avoidance of traumatism and asepsis. The latter is best secured by using metal instruments (catheters, etc.), sterilizing them by heat. Hollow instruments are to be boiled after use and cleansed with

alcohol.

The author considers the avoidance of all injury by instruments more important than minute asepsis. Previous to operating in the lower urinary tract, he recommends flushing out the urethra and bladder with a solution of salicylic acid (salicylic acid eight grains, to alcohol one ounce; add this to one pint of hot water), followed by a solution of bichloride of mercury (after the anæsthetic has been administered), and after the operation to flush out with a nitrate of-silver solution, 1 in 1,000.

Then follows a series of bacteriological experiments

18 American Journal of the Medical Sciences, June, 1894, p. 613.



with reference to the germicidal power of various substances ordinarily used with a view to disinfect or to render aseptic the urinary tract, when administered by the mouth or used locally.

The conclusions arrived at from the author's study of the subject from all sides - experimental, clinical and bacteriological — are summarized thus:

(1) Healthy urine is sterile.

(2) Purulent urine is always microbic.

(3) Microbic infection takes place from within the body by a number of methods in the course of disease. It is often brought about by instrumental manœuvres on the part of the surgeon.

(4) A healthy organism and vigorous bladder may cope successfully with microbic invasion, and rid itself spontaneously, or with a little aid, of all damage arising therefrom, showing little or no inflammatory response.

(5) A suitable condition of the patient's soil is essential to the propagation and perpetuation of inflammatory phenomena upon the urinary tract after mi-

crobic invasion.

- (6) This condition, intensified by traumatism and physical weakness, notably of the degenerative variety, is most intense when there is vesical distention with atony, and when the other ureters are dilated and the kidneys involved in the changes incident to tension below; namely, atrophy and sclerosis above, with or without surface catarrh.
- (7) Under these circumstances, surgical pyelonephritis is most likely to declare itself as a result of microbic infection from below — occasionally from above, in the course of suppurative disease or after operative interference.
- 8) Asepsis, antisepsis and sterilization of urine are ends to be attained in genito-urinary surgery, but, like all other greatest goods, not yet attained in greatest perfection. Much, however, can be done by local means in a prophylactic and curative way, little by internal medication, and possibly as much or more than by any other means, by flushing the urinary passages with natural mineral waters.

STRANGULATION OF THE TESTICLE BY ROTATION.

The July, 1894, number of the Annals of Surgery, contains an admirable summary, in an editorial article, of our knowledge on this subject, taken from the description of this accident, by Lauenstein in the Sammlung Klinische Vorträge, No 92, 1894. The conclusions which the study of cases and experiments on animals lead to are as follows:

- (1) The accident was first described by Nicoladoni.19 By a torsion of 180° or more of the spermatic cord, hemorrhagic infarctions of the testicle may be pro-
- (2) The condition has occurred in both the undescended and the descended testicle.

 - (3) The accident may occur at any age.
 (4) There have been eleven cases reported.
 (5) In six the right testicle was affected.
- (6) Five of these six cases showed a left spiral twist of the cord. Four cases involved undescended testes; in a fifth the testicle was just outside the outer
- (7) The accident is thought to be caused by mechanical movements of the testicle in walking, jumping, falling, etc.
 - 19 Arch, für Klipische Chir., Bd. xxxi, 11.

(8) In all the reported cases the attack was very sudden - pain, local swelling, cedema, redness and fever; and vomiting occurred in most of the cases.

(9) When an undescended testis is attacked there may be difficulty in making a differential diagnosis between this condition and strangulated hernia or appendicitis.

Reports of Societies.

AMERICAN DERMATOLOGICAL ASSOCIATION.

WHEN the Eighteenth Annual Meeting was called to order by the President, Dr. Morison, of Baltimore, in the pleasant quarters at the Arlington, there was a good attendance, but not equal to that at the last Congress, when only three members were absent.

DR. G. T. JACKSON, of New York, read the first paper on

THYROID FEEDING IN DISEASES OF THE SKIN.

After a general survey of the subject, he reported three cases of xeroderma, one of ichthyosis, and one of dermatitis exfoliativa, that he had treated with the thyroid. He prefers to use the powder of the desiccated thyroid in gelatine capsules, as that method allows of exact dosage, and assures the absorption of the medicament, and is greatly cheaper than any glycerine extract that he knows of. There is no definite dose, so he began with small doses, say two grains t. i. d., and increased as the patient bore it.

Headache, more or less severe and continuous; nausea; vertigo; lassitude; rapid pulse; sharp rise of temperature; and an intense and general erythema were occasioned by the drug. No case, save one, escaped some unpleasant symptom referable to the thyroid feeding. On the other hand, increased scaling, moisture and suppleness of the skin were apparently

caused by its use. No one of his cases was cured.
Up to May 1st, there had been reported 33 cases of skin diseases treated by thyroid feeding, namely: psoriasis 26 cases - 10 cured, 7 improved, 9 no change; xeroderma 2 cases — both improved; eczema chronica 2 cases — 1 cured, 1 no change; lupus vulgaris 2 cases — both improved; rosacea 1 case — no change. When the author's five cases are added to these, the total is 38, with 11 cured, 14 improved, and 13 unchanged.

The author is disinclined to further follow this method of treatment, because the results do not justify subjecting the patients to the unpleasant if not grave symptoms incident to the use of thyroid feeding.

Dr. Jackson's paper was discussed by Dr. Fox who said he thought the conclusions drawn were judicious. Any case of inflammatory disease like psoriasis is apt to improve when subjected to the change from outdoor to hospital care, and not too much stress must be laid on the effect of new remedies under these conditions.

Dr. HARTZELL had used the preparation in eczems psoriasis and ichthyosis, with no effect.

Dr. Stelwagon had seen no benefit in his cases of psoriasis, dermatitis exfoliativa and pityriasis rubra pilaris. He had used the desiccated thyroid, and had seen disagreeable symptoms produced, including cedems of the legs.

DR. HYDE reported cases of psoriasis in ten male

Two showed decided improvement; two were made very ill; and no benefit was noted in the these cases differed from alopecia areata. He had others. In a case of enlarged thyroid with eczema and alopecia, although the skin diseases were made worse, the thyroid cachexia and enlargement of the gland were improved. The improvement was so noticeable to the patient herself that she asked for a second course. Instead of beginning with small doses and gradually increasing, the speaker had commenced with a large dose and decreased.

The prevailing opinion of the members was to the effect that little is to be hoped from this new remedy, and that it may under some circumstances be a remedy not free from danger. Rheumatoid pains, great weakness, cholera-like attacks, high temperature, etc., were some of the symptoms which have been observed. far as skin diseases are concerned, it would scarcely be worth while to make further trial of thyroid extract.

Dr. Corlett stated that, in conversation with English physicians, he had found they were about ready to give it up over there unless it might be in lupus vulgaris, where some benefit was promised from

The next paper was by Dr. Fox, of New York, on

FOLLICULITIS DECALVANS.

He said there were undoubtedly various forms of alopecia areata other than the common variety with which we are familiar under this name. The term "folliculitis decalvans" he thought should include the greater number of these affections, which would appear to belong to one and the same disease, to which he would limit his remarks. Two photographs of the scalp, illustrating an instance of the affection, were shown. He considered this his best effort in photography of skin disease. In the advanced stage of the affection there were depressed pigmented cicatricial patches with affected follicles in the vicinity. The extension which usually took place resulted from the agmination and grouping of the follicles, and was well shown in the photograph; and attention was called to the difficulty in getting a sharp picture of this region. The affection begins by the formation of hyperemic patches which are tender; but as a plugging of the follicles is the chief feature, the name seems appropriate. The crown is the part usually affected. Nodules which are not follicular are seen to undergo superficial suppuration. These have given rise to the name "acne," which is a faulty term. As the hyperemia subsides, there is a noticeable sinking of the patch and the diagnosis "alopecia areata" is apt to be made. The chief distinction in this early stage is the redness of the surface and the subsequent sinking, as it were, of the surface, or incipient atrophy, which goes on until in the larger patches we have a cicatricial condition. In one case there was marked pigmentation. The term "keratosis" might be applied to the condition of plugging up of the follicular openings.

Whether the condition just mentioned precedes the inflammatory process or whether the disease is essentially inflammatory in nature, the microscope must It is seen in men, women and children, but in all of his cases there had been a general nervous condition present. Treatment had been unsatisfactory, though some cases have improved. A ten-per-cent. salicylic ointment is recommended as one likely to be followed by improvement, but the writer believes no plan of treatment can be regarded as curative.

DR. ZEISLER agreed with the speaker's view that seen half-a-dozen such cases. The roughness of the patch he thought was striking from the hairs being broken off. He referred to one case which the patient told him had been called folliculitis decalvans, but which on examination he had found to be favus, and he thought that after the scales and cups were removed a case of favus might readily be so regarded. His treatment had consisted in the use of a strong sulphur ointment.

DR. HYDE thought the pathology little understood; and until we do get more at the bottom of the matter. we cannot classify all unusual alopecias in the category. He spoke of tuberculosis of the scalp and odd varieties of lupus erythematosus which we can occasionally watch as it spreads over the scalp, leaving scar tissue behind. Inflammatory diseases of the skin, as we well know, do not leave scars, Why should it be otherwise on the scalp? He agreed with the impropriety of the term "acne," but at the present time was unwilling to express a decided opinion as to the nature of the affection. He had found benefit from the ammoniated mercurial ointment.

DR. SHERWELL thought it might be a variety of discoid lupus erythematosus of the scalp. He had in his cases also had best results from the white precipi-

Dr. Fox thought the adjective hystrix might be applied to denote the roughened spinous features. He thought it might be allied to lupus erythematosus. There was no suspicion of syphilis in any of his cases.

DR. CANTRELL, of Philadelphia, read the next paper on

A CASE OF FAVUS OF THE HEAD AND BODY.

The patient was a boy of ten, who had characteristic lesions upon the scalp, which after two years existence spread to the rest of the body with patches scattered over the back, arms, legs and buttocks. An excellent photograph showed this wide and marked distribution.

He asked whether the fungus being aerobic could live in the intestines and internal organs as had been reported.

Dr. Jackson spoke of an observation in which an hepatic ring had been surrounded with outlying cups.

Dr. Grindon spoke of the different varieties of fungus in hairy and non-hairy parts.

DR. ZEISLER said extra-capital location was explained by artificial inoculation from the scalp, but that especial interest attached to those cases in which the body lesions were primary. He spoke of favus attacking the nails of a coachman's toes, explained by the patient's going barefooted in damp straw, etc., where mice were abundant. In Kaposi's case of internal favus the diagnosis had been made post-mortem only, but was an undoubted fact.

DR. WIGGLESWORTH said the fungus was with difficulty inoculated upon the skin of the body. He and Dr. White had experimented in many ways, and had only succeeded in its reproduction when the fungus was pricked into the hair follicles. The corn-colored cups which resulted yielded readily to treatment.

Dr. Hyde said almost any treatment was effective, but none curative. A change of treatment at frequent intervals gave the best results.

Dr. Sherwell spoke of favus of the face in a

Digitized by GOOGIC

gentleman whose three dogs and three other members of the family had it; also the mice, and some so badly that all tissues were destroyed down to the brain, and the fungus could be detected in the brain substance, which was equivalent to its existing in the internal organs.

I)R. WHITE mentioned an instance of favus upon the glans penis. One might infer from the remarks of several gentlemen that favus was an incurable disease, whereas we see constantly, and especially among Russian immigrants, the unmistakable evidence of past favus upon the scalp, which has entirely disappeared. He knew of one positive cure which had shown no return for fifteen years.

DR. HARTZELL said that Hardy quotes a case of favus of the glans penis where, with the aid of a lens, a hair follicle was found, indicating that non-hairy parts are really exempt.

DR. ALLEN said he was about to say just what Dr. White had said relative to the number of cured cases seen in Russian Poles, although he believed many of these permanently bald scalps have resulted from some alopecia such as Dr. Fox had discussed under folliculitis decalvans and not all from favus. He had not until recently seen favus upon the general surface in his own practice, but had now under treatment a little girl with lesions upon the ear as well as the scalp. The mother and brother both have favus of the scalp.

Dr. Stout read, by invitation, a description of the microscopic appearances of the case.

DR. CORLETT, of Cleveland, followed with a paper on

COLD AS AN ETIOLOGICAL FACTOR IN DISEASES OF THE SKIN,

reporting a series of cases that presented for the most part lesions upon the backs of the hands, of an erythematous and slightly scaly nature resembling patches of eczema, but without exudation. The patients for the most part showed the same affection upon the same locations in succeeding winters, remaining free in mild weather. Some patches were the size of a silver dollar, thickened, and of rosy hue with elevated margins. There was little tendency to spread.

Three conditions seemed necessary to its occurrence:
(1) low temperature; (2) air in motion; (3) humidity. At times the affection resembled herpes; but the reader considered it a disease sui generis, and would name it "dermatitis hiemalis."

Treatment consisted in 50 per cent. glycerole of tannin, and emollients or astringents according to the case, but above all change of climate.

Dr. Sherwell said some of the descriptions suggested angeio-keratoma.

DR. HYDE said we were all familiar with the condition, and with the, at times, marked influence of cold in skin diseases, especially in the fall of the year. Many factors may, however, be present; and he was especially suspicious of hand lesions. Here occupation, the various trades, gloves worn the preceding year and put on as the cold weather approaches, and the many sources of infection should all be eliminated before we attribute any etiological importance to the weather. Treatment by parasiticides was usually successful.

DR. WHITE, if asked to make a diagnosis from the photography, would call the condition eczema. This, of course, may be aggravated by cold.

(To be continued.)

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SMALL-POX IN MASSACHUSETTS: A REVIEW OF ITS PREVALENCE.

THE epidemic of small-pox which began in October last being practically at an end, so far, at least, as Massachusetts is concerned, an opportunity is afforded for reviewing the situation as presented by the experience of recent years.

As compared with the epidemic of 1872-73, and the still greater prevalence in pre-vaccination times, the recent outbreak is scarcely worthy of mention. But the collection of more careful records during the past ten years furnishes data for conclusions as to the effect of better methods of control.

The first table on the following page shows the comparative prevalence of small-pox in Massachusetts for the past forty years. The data presented are the deaths in each year, the percentage of the total mortality, and the death-rate per 10,000 of the living population.

According to this table, it appears that there have been 4,720 deaths from small-pox in Massachusetts in the forty years ending with 1893; and so far as is known from the returns received since January 1, 1894, 30 deaths have occurred from the same cause during the first six months of the present year.

Of the total of 4,720 deaths in the forty-year period, 4,412 occurred in the first twenty years (1854-73), and 308 in the second twenty years (1874-93). The ratio in the first instance was 170 per million of the population annually, and in the second twenty years, eight per million. For the decade ending with 1893, the mortality from this cause was but little more than two per million annually.

The next table presents the number of deaths from small-pox at each period of life, as compared with the total mortality from this cause. For the sake of comparison, similar facts are presented for populations living in the seventeenth and eighteenth centuries.

SMALL-POX IN MASSACHUSETTS .- FORTY YEARS (1854-1893).

	•	_ ×	tion.			. .	tion.	
Years.	Deaths from small-pox.	Percentage of total mortality.	Ratio per 10,000 of living population	Years.	Deaths from small-pox.	Percentage of total mortality.	Ratio per 10,000 of living population.	
1854	207	.97	1.9	1874	26	.08	.2	
1855	325	1.56	2,9	1875	34	.09	.2	
1856	140	.68	1.2	1876	31	.09	.2	
1857	23	.11	.2	1877	24	.08	.15	
1858	12	.10	.1	1878	2	.007	.012	
1859	255	1.22	2.1	1879	7	.02	.04	
1860	334	1.45	2.7	1880	38	.11	.21	
1861	33	.14	.3	1881	47	.13	.25	
1862	40	.17	.3	1882	45	.12	.24	
1863	42	.15	.3	1883	5	.01	.03	
1864	24 2	.84	1.9	1864	3	.008	.01	
1865	221	.84	1.7	1885	19	.05	.10	
1866	141	.59	1.1	1886			••	
1867	196	.82	1.5	1887	3	.007	.015	
1868	20	.08	.2	1888	8	.019	.04	
1869	59	.22	.4	1889	6	.014	.03	
1870	181	.48	.9	1890	1	.002	.005	
1871	294	1.05	1.9	1891	1	.002	.004	
1872	1,029	2.94	6.7	1892	2	:004	.01	
1873	668	1.97	4.3	1893	6	•	.03	
Totals	4,412			Totals	308			
Av'ges		.088	1.7	Av'ges		.04	.08	

DEATHS FROM SMALL-POX BY AGE-PERIODS. DISTRIBUTION OF 1,000 DEATHS.

Ages.	Geneva, 1580–1760.	Kilmarnock (Scotland), 1728–1764.	Massachusetts, 1863–1892.
Under 5 years	805.5	942	324
5 to 10 years	155.5	84	70
10 to 20 years	26.5	ð	119
20 to 30 years	10.	5	266
30 to 40 years)		103
40 and upward	} 2.5		106
Not stated		14	12
<u> </u>	1,000	1,000	1,000

Statistics giving deaths by ages are not abundant for years prior to 1800. The foregoing statistics, from authentic records of Geneva and from a very carefully kept town-clerk's record in a Scotch village, are believed to be trustworthy. A comparison of these figures for periods prior to 1800 with the table for Massachusetts for a recent period show that been kept, in consequence of a statute of 1893, requira very marked change has taken place in the comparative mortality at different ages, and that some influence State authorities. From these records it has been

has been operative to effect a very decided change; so that small-pox, which was almost exclusively a children's disease prior to 1800, has in recent times undergone a transformation, from the operation of some cause or other. This change has not taken place, so far as any records show, in the case of any other dis-

In Geneva, from 1580 to 1760, out of every 1,000 deaths from small-pox, 961 were those of children under ten years of age; and in Kilmarnock during the thirty-six years (1728-64), 976 out of each 1,000 deaths from small-pox were also those of children under ten.

In Massachusetts, on the contrary, for the period (1863-92) but little more than one-third (394 out of 1,000) of all deaths from small-pox were those of children under ten; and the majority were those of persons over ten years old. The number of such deaths between the ages of twenty and thirty was more than double the number of deaths between ten and twenty.

Now, this very decided change in the incidence of small-pox at different age-periods, a change which has not taken place in the case of any other disease, can only be explained by some influence which is exerted upon small-pox, but not upon other diseases; and this factor is the practice of vaccination.

When the population of a large city invaded by small-pox is subjected to a critical investigation, as was done by Dr. Barry in his searching examination of the population of Sheffield, England, in 1887, it was found to be possible to contrast the unvaccinated with the vaccinated population living under like conditions in the same city; and the result was precisely similar to that which appears in comparing a community living in the last century with a vaccinated community living in the present century under an invasion of small-pox.

Had the 324 infants in each 1,000 who died of small-pox in Massachusetts in the period (1863-92) been successfully vaccinated, the contrast between the column for Massachusetts and the two preceding columns taken from pre-vaccination periods would undoubtedly have been much more striking, since the death from small-pox of a successfully vaccinated infant is an almost unknown event.

As the protection afforded by primary vaccination begins to wane, and this well-known immunity is not re-established by re-vaccination, the deaths begin to increase, as is shown in the column for Massachusetts by the figures 70, 119 and 266 for the successive ageperiods 5-10, 10-20, 20-30, these deaths being made up partly of unvaccinated persons who had not been exposed to small-pox in infancy, and partly of those who had been vaccinated in infancy, but had never submitted themselves to re-vaccination.

During the past ten years very careful records have ing immediate notice of all cases of small-pox to the

possible to collect definite evidence relative to the protection afforded by vaccination in this State.

The following table presents a summary of the cases:

SMALL-POX IN MASSACHUSETTS, 1885-1893. COMPARATIVE FATALITY OF THE VACCINATED AND UNVACCINATED.

	Sm	all-P	OX.	Vac	cina	ted.	Unva	ccin	sted.	Doubtful or Unknown.			
Years.	Савев.	Deaths.	Per ct.	Cases.	Deaths.	Per ct.	Cases.	Deaths.	Per ct.	Салеев.	Deaths.	Per ct.	
1885	32	11		7	0		13	9		12	2		
1886	2	1		1	1					1			
1887	18	4		6	0		5	2		2	2		
1888	32	5		15	1		13	3		4	1		
1889	15	3		11	1		3	1		1	1		
1890	6	1		2			2			2	1	١	
1891	5	1		1			3	1		1		١.,	
1892	19	2	! ! •• !	7			10	1		2	1	 ••	
1893	44	6	· • • •	11			27	6		6		۱.,	
1894 6 mos.	182	30		80	3		82	21		20	6		
	350	64	18.3	141	6	4.8	158	44	27.8	51	14	'27.	

Total number of reputed cases of small-pox, nine ye	ars	
and a half, ending June 30, 1894		350
Total number of deaths from small-pox for same pe	riod	€4
Ratio of deaths to cases		18.3 per ct.
Of the foregoing, there were among the vaccinated		141 cases.
Of the foregoing, there were among the vaccinated		6 deaths.
Ratio of deaths to cases in the vaccinated		4.3 per ct.
There were among the unvaccinated		158 cases.
There were among the unvaccinated		44 deaths.
Ratio of deaths to cases among the unvaccinated		27.8 per ct.
There were among those in whom the facts relative	o to	
vaccination were doubtful or unknown		51 cases.
There were among those in whom the facts relative	e to	
vaccination were doubtful or unknown		14 deaths.
Ratio of deaths to cases among these		27.4 per ct.

It is a favorite practice among the opponents of vaccination to quote the severe epidemic of small-pox of 1872-73 in Massachusetts to disprove the efficacy of vaccination. All such statements, however, have absolutely no value, from the fact that they fail to show any definite information as to the comparative mortality from small-pox of the vaccinated and the unvaccinated. As a matter of fact, there are no definite statistics upon this point in Massachusetts for years prior to 1885.

Hence the value of the foregoing tabular statements may be recognized, as confirming similar inquiries made in other countries. By this table, it appears that the mortality from small-pox among the unvaccinated was 27.8 per cent., as compared with only 4.3 per cent. among the vaccinated, the former being more than six times as great as the latter.

Of the foregoing 350 cases, 138 (or nearly 40 per cent.) occurred in Boston, 39 in Holyoke, 31 in Chicopee, 20 in Springfield, 21 in Worcester, 17 in New Bedford, 12 in Lowell, 9 in Westfield, 8 in Chelsea, 7 in Huntington, 6 in Fall River, 4 at the State almshouse in Tewksbury, and the remainder University of Pennsylvania, Georgetown Medical

smaller towns. Twelve of these cities and towns were places in which paper-mills using rags are located; but the actual number of paper-mik operatives attacked with small-pox was only 18, a smaller ratio than that which prevailed in earlier years. Several persons were attacked who were doubtless indirectly exposed to this influence, being persons of other occupations living in the same families or tenements with paper-mill operatives.

MEDICAL NOTES.

THE CHOLERA. - The cholera, which has been epidemic for the past few weeks at Jemmapes in the province of Hainaut in Belgium, has now appeared in Liège, and in the two neighboring villages of Angleur and Jeysille. In Russia, the disease has continued in many of the provinces, and has appeared in St. Petersburg, according to official statements. The Danish government has prohibited further importation of rags from St. Petersburg, and has established a quarantine against that city.

THE PLAGUE. - The plague at Hong Kong continues unabated, and reports from St. Petersburg state that there is a disease now prevalent in the province of Radom, with many fatal cases, which bears a strong resemblance to the plague at Hong Kong. Cases have also occurred at Moscow and St. Petersburg. Radom is one of the provinces in which the cholera was reported epidemic a short time ago; but the reports now given are that the disease is not choleraic but more resembles the plague.

THE AMERICAN ACADEMY OF MEDICINE. — The nineteenth annual meeting of the American Academy of Medicine will be held at Jefferson, N. H., on August 29 and 30, 1894. The greater part of the session is to be devoted to the discussion of certain problems relating to "The Medico-social Relations of the Medical Profession to the 'Dependent Classes.'"

Italian Dermatological Society.—The Italian Society of Dermatology and Syphilography will hold its annual meeting in Rome in the latter part of October. The subjects proposed for discussion are (1) Mycological Morphology: Clinical Study and Treatment of Tricophytic Diseases; (2) Hereditary Syphilis.

THE BOARD OF MEDICAL EXAMINERS OF MARY-LAND. — At the last semi-annual examination held by the State Board of Medical Examiners of Maryland, sixty-six graduates in medicine applied for examination. Fifty-three were granted licenses. The following medical schools were represented: University of Maryland, 36 applicants, 3 failed; College of Physicians and Surgeons, 12 applicants, 4 failed; Baltimore Medical College, 8 applicants, 1 failed; Baltimore University School of Medicine, 3 applicants, 2 failed; Howard Medical College, Washington, D. C., 2 applicants, 2 failed; Woman's Medical College, Baltimore, were scattered in smaller numbers in 34 cities and College, Washington, D. C., University of the City of New York, College of Physicians and Surgeons, New York, each one applicant, no failures.

THE DISTRIBUTION OF RED HAIR IN FRANCE. -An enterprising Frenchman, M. Topinard, has investigated the distribution of red hair in France, and finds that the departments showing the largest proportion of red-haired persons are those which have also the greatest number of blondes. The proportion of "red heads" in the various provinces is given as 175 to 1,000 in l'Asine, 177 in la Drôme, 176 in Saône et Loire, 174 in la Meuse, while it is only 65 in le Lot, 60 in la Haute-Garonne, 52 in Corse and 27 in le Var.

DEATH OF THE SMALLEST MAN IN THE WORLD. Dudley Foster, said to have been the smallest man in the world, died at Bridgetown, N. S., on June 20th, of heart disease, aged sixteen years and ten months. He was thirty inches high, and weighed twenty pounds.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, July 11, 1894, there were reported to the Board of Health of Boston, the following numbers of cases of acute infectious disease: diphtheria 33, scarlet fever 26, measles 15, typhoid fever 17.

THE EMERGENCY HOSPITAL OF BOSTON. — The Emergency Hospital completed its third year of work last week. Since its establishment it has given its service to nearly twenty-six thousand cases of varying degrees of severity.

THE HARVARD SUMMER SCHOOL OF PHYSICAL TRAINING. — There are already sixty-five students taking the summer course in physical training at Cambridge this year. This is a larger number than last year, but smaller than the attendance in 1892, when there were one hundred students. Thirty-eight of the students this year are women.

A PHYSICIAN'S GOLDEN WEDDING. — Dr. and Mrs. Benjamin Hubbard of Plymouth, Mass., celebrated their golden wedding recently.

A Nurses' Home for the Malden, Mass., HOSPITAL. — Hon. E. S. Converse and A. H. Davenport bave signified their intention of building a nurses' home for the Malden City Hospital. For some time there has been a need of proper accommodation for the nurses, and the new building, which will have rooms for twenty nurses, will be a welcome addition.

A LEGACY TO THE PORTSMOUTH, N. H., HOSPI-TAL. - The will of the late Franklin R. Bragdon, of York, Me., bequeaths five thousand dollars to the Portsmouth Cottage Hospital, to establish a free bed. The corporation of the hospital is also made residuary legatee of his estate.

NEW YORK.

ST. JOHN'S GUILD FLOATING HOSPITAL. - The twentieth season of the St. John's Guild Floating Hospital was inaugurated on July 5th. As was the from the East and three from the West side of the hours in the last days of her trial.

The average number of mothers and children carried is about one thousand, and the expense of each trip of the hospital boat is \$250. Contributions of this amount have already been received from a cousiderable number of wealthy citizens. This season Dr. W. A. Walker is the attending physician and Dr. W. J. Purcell, health inspector. Since the floating hospital was started over half a million individuals have been carried on its excursions. The city now has thirteen free baths in operation, and two others are shortly to be opened. This is a larger number than in any previous season.

DEATH OF MAJOR WILLARD BULLARD. - Major Willard Bullard, for a number of years Chief of the Sanitary Corps of the Police, recently died at the age of sixty. He was a veteran of the war and a man of great ability and the highest integrity. Many of the improvements in the tenement-house system introduced during the last few years were largely due to his energetic and persevering work, and he devoted much time and attention to the affairs of the Society for Improving the Condition of the Poor, of which he was a trustee.

STATE COMMISSION IN LUNACY.— For some time past the State Commission in Lunacy has been holding an investigation of the condition of the city asylums for the insane on Ward's Island, and the state of affairs revealed by this is such that it seems altogether probable that the outcome will be the transfer of all the pauper insane of the city to the care of the State. In the State Care Act, as it was passed by the Legislature, the counties of New York, Kings and Monroe were permitted to retain the care of their insane dependents, but it was provided that whenever a Board composed of the State Commissioners in Lunacy, the President of the State Board of Charities and the State Comptroller shall decide that it is advisable that the State shall assume the care of the pauper insane in any of these counties and so report to the Governor, the Legislature has the power to make the transfer. In Monroe County this transfer has already been made, while in Kings County the change has been determined upon, though not yet carried out.

A COMMISSION TO EXAMINE INTO THE INSANSITY of Mrs. Halliday. — The Governor has appointed a commission to investigate all the facts relating to the sanity of Mrs. Halliday, of Orange County, who was found guitty of murder in the first degree on June 21st. There seems to be little question that she is really insane, but the local feeling was very bitter against her, and the jury was no doubt influenced by this. Previous to the commission of the murders for which she was indicted she had been confined for considerable periods in three different asylums for the insane, and the experienced alienists in charge of these institutions had no doubt of her insanity; while the medical testimony as to her sanity accepted by the jury was that of one or two country practitioners and of case last year six trips will be made each week, three one expert, Dr. Mann, who saw her but for a few

Miscellanp.

LINGUA GEOGRAPHICA.1

Spehlmann reports a careful study of twenty-three cases of this disease, which has been but little known. He describes it as an independent benign affection of the tongue, entirely unrelated to any other disease of that organ. The clinical picture is that of a circumscribed area of desquamation of epithelium with more or less prominent borders. The disease runs a chronic course and the patches disappear and shift their position. The anatomical changes consist of an accumulation of lymphoid cells in the meshes of the connective tissue of the mucous membrane, in the papillæ, and especially in the epithelium, and of an exudation in the upper layers of the rete Malpighi, the horny layers being thrown off. The disease affects especially children in the first year of life, and most frequently accompanies organic diseases with consecutive disturbance of nutrition. A parasitic origin for the disease has been often suggested, but never proven. There is no particularly effective treatment.

"BARCLAY'S GEESE." 2

In an address delivered at the opening of the Wistar Institute of Anatomy and Biology of the University of Pennsylvania, Dr. William Osler, speaking of the developments of human anatomy and biology, said:

"Truth has been well called the daughter of Time; and even in anatomy, which is a science in a state of fact, the point of view changes with successive gener-The following story, told by Sir Robert Christian, of Barclay, one of the leading anatomists of the early part of this century, illustrates the old attitude of mind still met with among 'bread and butter' teachers of the subject. Barclay spoke to his class as follows: 'Gentlemen, while carrying on your work in the dissecting-room, beware of making anatomical discoveries; and above all beware of rushing with them into print. Our precursors have left us little to discover. You may, perhaps, fall in with a supernumerary muscle or tendon, a slight deviation or extra branchlet of an artery, or, perhaps, a minute stray twig of a nerve, - that will be all. But beware! Publish the fact, and ten chances to one you will have it shown that you have been forestalled long ago. Anatomy may be likened to a harvest-field. First come the reapers, who, entering upon untrodden ground, cut down great store of corn from all sides of them. These are the early anatomists of modern Europe, such as Vesalius, Fallopius, Malpighi, and Harvey. Then come the gleaners, who gather up ears enough from the bare ridges to make a few loaves of bread. Such were the anatomists of last century, -Valsalva, Cotunnius, Haller, Winslow, Vicq d'Azyr, Camper, Hunter, and the two Monros. Last of all come the geese, who still contrive to pick up a few grains scattered here and there among the stubble, and waddle home in the evening, poor things, cackling with joy because of their success. Gentlemen, we are the geese.' Yes, geese they were, gleaning amid the stubble of a restricted field, when the broad acres of Those were the days biology were open before them.

Centralblatt für innere Medicin, 18, 1894.
 University Medical Magazine, June, 1894.

when anatomy meant a knowledge of the human frame alone; and yet the way had been opened to the larger view by the work of John Hunter, whose comprehensive mind grasped as proper subjects of study for the anatomist all the manifestations of life in order and disorder.

"The determination of structure with a view to the discovery of function has been the foundation of progress. The meaning may not always have been for 'him who runs to read'; often, indeed, it has been at the time far from clear; and yet a knowledge in full detail of the form and relations must precede a correct physiology. The extraordinary development of all the physical sciences, and the corresponding refinement of means of research, have contributed most largely to the enlightenment of the 'geese.' The remarkable revolution in our knowledge of brain functions has resulted directly from the careful and accurate study by Barclay's 'geese,' of the anatomy of the nervous system. Truly the gleaning of the grapes of Ephraim has been better than the vintage of Abi-Ezer."

THE ACTION OF ASPARAGUS ON THE KIDNEYS.

DR. BURNEY YEO writes to the *Lancet*, a brief account of a test as to the diuretic properties of asparagus. He says:

"Choosing four separate, not consecutive, days when I was at liberty to follow precisely the same régime of eating and drinking, removed by at least twenty-four hours from any such disturbing effect as "dinner parties," to which one of your correspondents refers, I added on two of those days to my diet, in other respects precisely the same, some asparagus, and I carefully measured the excretions of urine on each of the four days for purposes of test and comparison, and with the following results. On April 28th to 29th, having eaten about fifteen heads of asparagus the night before, and the same quantity at a mid-day meal, I measured the urine passed in twenty-four hours, namely, from 8 A. M. to 8 A. M.: the total amount was 50 oz., and the density varied from 1.012 to 1.028, the average being 1.020. On April 30th to May 1st, having eaten and drunk in precisely the same manner, but without any asparagus, and having measured the urine passed within a like period, I found the total amount was $31\frac{1}{2}$ oz., the density varying from 1.021 to 1.029, the average being 1.025. On May 2d to 3d I ate asparagus as before, and again carefully measured the urine passed between the same hours; the total amount was $54\frac{1}{2}$ oz., and the density varied from 1.012 to 1.023, the average being 1.018. On May 5th to 6th I again measured the urine passed in a like period, adhering to the same diet, but without asparagus; the total amount passed was 351 oz., and the density varied from 1.018 to 1.025, and the average was 1.022. I ought perhaps to add that the total amount of beverage I habitually take daily does not exceed 35 oz. to 40 oz. To resume; on the two days I took asparagus I passed respectively 50 oz. and 541 oz. of urine of an average specific gravity of 1.020 and 1.018; on the two days I took no asparagus I passed respectively 311 oz. and 351 oz. of an average specific gravity of 1.025 and 1.022."

A similar test was applied to two hospital patients
¹ Lancet, June 2, 1894.

who were laid up with fractured legs. The following are the results:

"(1) A. B., aged thirty-six: average amount of fluid consumed daily, 56 oz.; average daily excretion of urine before eating asparagus, 53 oz.; average daily excretion with asparagus, 61½ oz.—a balance or excess of 8½ oz. in favor of asparagus. (2) C. D., aged fifteen: average amount of fluid consumed daily 36 oz.; average daily excretion of urine before eating asparagus, 32 oz.; average daily excretion with asparagus, 41½ oz.—a balance or excess of 9½ oz. in favor of asparagus.

"Such, then, is the effect of the addition of asparagus to the diet of persons with presumably healthy kidneys; and from these observations I think we are justified in accepting the common belief that the physiological effect of asparagus is to increase the flow of urine; but diuretic drugs are notoriously uncertain in

their action."

HENNA.

HENNA, known to Europeans almost solely as a hair-dye, holds an important place in Arabian pharmacy, according to the reports of M. Ehrmann.1 With them it is used principally in the form of a powder of greenish-brown hue, showing an orange tinge when exposed to the light. It is formed by simply drying and then powdering the leaves of the Lawsonia alba. As among the earliest Egyptians, it Its slightly is used by the Arabians as a cosmetic. tanning effect toughens the skin, lessens the perspiration, and protects the skin against sudden changes in temperature. Almost all the women and many of the men dye their hands and feet with the powder, after the following manner: The powder is moistened in a little water and the paste spread upon the extremities, which are bandaged with linen on going to bed. By morning the color, a bright yellow, has become sufficiently endyed to last without renewal for fifteen or twenty days.

The "koheul" of the Arab women is made with powdered henna mingled with lemon-juice, this preparation being considered superior to that made with antimony. The Arab proverb says, "that every woman who smears her eyelids with koheul, her hands and feet with henna, and perfumes her breath, is pleasing

to God and to her husband."

In a more strictly therapeutic sense, the powder is used in the treatment of rhagades and ulcers; while a decoction of henna is prescribed in diarrhea, hepatitis and calculous disease. It is a commonly used parasiticide for pediculi. Cataplasms of henna and anise are employed for the relief of migraine.

CERTAIN PECULIARITIES OF THE URINE IN PERTUSSIS.

THE statement of Cherubino, in 1892, that in sixteen out of one hundred cases of pertussis he had found sugar in the urine, has led Blumenthal, of Moscow, to a careful study of the urine in a series of cases of whooping-cough. He makes a preliminary report in which he says that without exception the urine of children with whooping-cough has the following character.

La Médecine Moderne, No. 43, 1894.
 St. Peterburger Med. Wochenschrift, 17, 1894.

The following It is pale yellow and very acid, with a high specific gravity of 1.022 to 1.032, being nearer the latter in a vast majority of the cases. Soon after being voided, it deposits a yellow sediment of uric acid. In a very large proportion of cases this deposit consists wholly of uric acid, rarely showing any urates. Calcic oxalate crystals were never found. Albumin was absent, and although repeatedly sought no sugar was ever found, though there was several times a reduction of Fehling's and Nylander's solution, due to the uric acid or an excess of glycuronic acid. Certain specimens showed an abnormal sinisterrotation in the polariscope. The cause of the high specific gravity seemed largely due to the uric acid which on quantitative examination was found to be two or three times the normal amount in twenty-four hours, especially in young children.

This peculiar group of characteristics appeared in the very first stages of the disease, being well marked in the catarrhal stage — increasing with the cough and lasting till the disease is over. Quinine and antipyrine had marked effect in reducing the specific gravity often to 1.005 or 1.006, in lessening the excess of uric acid until often the urine became turbid and alkaline. Careful comparative examinations all pointed to this group of signs belonging especially to whooping-cough and not being the result either of the fever, the dyspuces or the vomiting. It is suggested for further investigation that the excess of uric acid is the result of abnormal leucocytosis which appears with the onset of the disease.

THERAPEUTIC NOTES.

A USEFUL SUPPOSITORY FOR HEMORRHOIDS. — Dr. James McLeod reports excellent results from the use in cases of hemorrhoids of suppositories made from the following formula:

MALAKIN.—Jaquet reports 1 upon the pharmacological and therapeutic action of malakin. It occurs in small, bright-yellow needles which melt at 92° C., and are insoluble in water and but slightly so in alcohol. It dissolves with a yellow color in sodium solutions. Weak mineral acids break it up into salicyl aldehyd and phenitidin. After trial upon animals had shown it to have an antipyretic action without causing any fall of blood-pressure, Jaquet gave it to human patients. In acute articular rheumatism doses of four to six grammes gave very satisfactory results. Four grammes represent a little more than two grammes of salicylic acid. As an antipyretic, one gramme suffices to reduce the temperature from one to one-and-onehalf degrees; but, unlike previous antipyretic drugs, it acts slowly, the fall of temperature being noticed first in about two hours, which points to a slow decomposition of the drug by the gastric acids. The reduction of temperature was always accomplished without depression, collapse or chill. As an antineuralgic its effect is slow, but fairly good. The only unfavorable symptom noticed was vomiting in one patient. seems to have an especial usefulness in patients who

¹ Correspond, blt. für Schweizer Aerzte, 1893, No. 18, and Central-blatt f. med. Wiessenschaften, 1894, No. 8.

METEOROLOGICAL RECORD,

For the week ending June 30th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:-

Date.	Baro-Thermom- meter eter.			Relative humidity.					Velocity of wind.				inches.	
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 Р. М.	Daily mean.	8.00 A. M.	8.00 P. M.	¥.00 A. M.	₹.00 P. M.	R.00 A. M.	8.00 P. M.	Rainfall in in
S24 M25 T26 W.27 T28 F29 S. 30	30.25 30.12 29.98 29.88 29.96 30.12 30.04	56 64 77 78 78 60 70	58 71 88 84 87 63 82	55 56 66 71 69 58 58	91 89 92 89 68 95	81 83 75 82 74 93 82	81	S.E. S.W. S.W. W.	E. S.W. S.W. S.W. S.W. N.E. S.W.	18 5 10 17 8 8 5	10 12 16 13 5 6	0. 0. 0. 0. 0.	0. 0. F. 0. 0.	0.01
K9-				-			-						_	

*O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., amoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall.

RECORD OF MORTALITY FOR THE WEEK ENDING SATURDAY, JUNE 30, 1894.

Estimated popu-lation. Reported deaths in each. Deaths under five years. Percentage of deaths from Diphtheria and croup. Infectious diseases Diarrhœal diseases. Consump-tion. Cities. Scarlet fever. 971 523 29.70 18.60 New York . 6.80 1,956,000 9.00 Chicago . . Philadelphia 1,438,000 1,139,457 319 382 30.88 34.75 $\frac{22.72}{21.30}$ 4.32 7.50 1.043 000 663 7.50

1.00 .80 2.55 Brooklyn St. Louis . 540,800 540,800 501,107 500,600 285,000 168 49 13.20 15.60 4.80 7.20 .60 Boston Baltimore 192 123 97 35 38.48 14.58 5.20 12.96 29.64 10.53 1.04 1.04 Washington .81 1.48 Cincinnati 325 000 11.84 1.48 136 24.42 Pittsburg 272,000 Milwaukee . Nashville . 265,000 87,754 11 26 30 30.80 13.33 15.40 13.33 6.66 3.33 Charleston 65 165 Portland. Worcester Fall River 40,000 100,410 12 35 20 29 49 10.35 51.00 10.35 92,233 90,613 2.04 10.52 48.96 38 29 18.41 17.25 15.78 2.63 Lowell Cambridge . 12 3.45 10.35 17.20 79,607 79,607 65,123 50,254 49,900 47,741 43,348 33,939 33,155 Lynn . . Springfield 6 21 23.80 9.52 14.28 4.76 Lawrence 17 5 5.88 New Bedford 5.88 17.64 Holyoke . Brockton Salem . . Haverhill 7 42.84 10.00 3 3 2 1 2 2 4 28.56 10 33,100 32,925 30,209 29,806 29,383 28,837 27,293 26,955 22,058 19,642 10 20.00 Malden . Chelsea . 30.00 20.00 10.00 10.00 10.00 11 18.18 Fitchburg 8 14.28 Newton . . Gloucester . 8 2 10 12.50 Taunton . . Waltham . 62 KO 12.50 50.00 Quincy . Pittsfield 0 18,502 16,585 16,331 14,073 5 3 4 0 ŏ 66.66 Everett orthampton . Newburyport .

10.920

Amesbury

Deaths reported 3,228: under five years of age 1,544; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fever) 932, diarrhœal diseases 607, consumption 290, acute lung diseases 223, diphtheria and croup 169, scarlet fever 43, typhoid fever 31, whooping-cough 29, measles 22, malarial fever 12, cerebrospinal meningitis 11, small-pox 5, erysipelas 3.

From typhoid fever Philadelphia 8, Washington 7, New York 6, Brooklyn 3, Cincinnati 2, Boston, Cleveland, Nashville, Charleston and Somerville 1 each. From whooping-cough Philadelphia 8, Brooklyn 6. New York, Washington and Worcester 3 each, Brockton 2, Cleveland, Nashville, Cambridge and Newton 1 each. From measles New York 10, Cleveland 9, Philadelphia 2, Fall River 1. From malarial fever New York 5, Brooklyn 4, Nashville 2, Philadelphia 1. From cerebro-spinal meningitis New York 4, Washington 3, Cincinnati 2, Brooklyn and Cleveland 1 each. From small-pox New York 4, Cleveland 1. From erysipelas Brooklyn 2, New York 1.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 30, 1894, TO JULY 6, 1894.

CAPTAIN GEORGE McCREERY, assistant surgeon, will be relieved from duty at Fort D. A. Russell, Wyoming, by the commanding officer of that post and will report for duty at Fort Washakie, Wyoming.

FIRST-LIEUT. FRANK T. MERIWETHER, assistant surgeon, will be relieved from duty at Fort Logan, Colorado, by the commanding officer of that post and will report for duty at San Diego Barracks, California.

MAJOR AUGUSTUS A. DELOFFRE, surgeon, U. S. A., Fort Logan, Colorado, is granted three months' leave of absence, with permission to go beyond sea.

CAPTAIN LOUIS S. TESSON, assistant surgeon, is relieved from duty at Jefferson Barracks, Missouri, upon the arrival of CAPTAIN CHARLES B. EWING, assistant surgeon, and ordered to duty as attending surgeon and examiner of recruits, Chicago, Ill., relieving CAPTAIN DANIEL M. APPEL, assistant surgeon.

CAPTAIN APPEL, on being thus relieved, is ordered to Fort Porter, New York, for duty, relieving MAJOR CURTIS L. PRICE, surgeon.

MAJOR PRICE, on being thus relieved, is ordered to Fort Custer, Montana, for duty, relieving Captain PRIER R. Egan, assistant surgeon.

By direction of the President, the retirement from active service, June 28, 1894, of Colonel Bernard J. D. Irwin, assistant surgeon-general, is announced.

BOOKS AND PAMPHLETS RECEIVED.

Catalogue of the University of Texas for 1893-94.

Twenty-seventh Annual Report of the Directors of the Massachusetts Infant Asylum, 1894.

The Massachusetts Medical Society, Catalogue of its Officers, Fellows and Licentiates, 1781-1893.

The Uric Acid Diathesis and its Treatment. By John F. Barbour, M.A., M.D. Reprint. 1894.

Papilloma in the Sclero-Corneal Region. By David Coggin, M.D., of Salem, Mass. Reprint. 1894.

Woman's Medical College of the New York Infirmary, Annual Catalogue and Announcement, June, 1894.

Report of the Directors of the Boston Training-School for Nurses, attached to the Massachusetts General Hospital, for 1893.

Transactions of the Massachusetts Medico-Legal Society. Vol. II, Nos. 3 and 4, 1893-94. Boston: Published by the Society. 1894.

Neurasthenia and its Treatment by Hypodermic Transfusions (According to the Method of Dr. Jules Chéron). By Ralph Browne. Reprint. 1894.

Transactions of the Vermont State Medical Society for the Year 1893. Published by the Society. Annual Meeting in 1894 in Montpelier, October 11th and 12th.

Transactions of the Fifteenth Annual Meeting of the American Laryngological Association, held in the City of New York, May 22, 23 and 24, 1893. New York: D. Appleton & Co. 1894.

Resoconto Clinico Triennale della Sezione Chirurgica dell' Ospedaletto Infantile Regina Margherita in Torino per gli anni 1891-92-93. Dott. Annibale Nota, Chirurgo Primario. Torino. 1894.

Some Anatomical and Surgical Relations of the Parts Involved in the Operation of Intra-Cranial Neurectomy of the Fifth Pair of Nerves and Removal of the Gasserian Ganglion. By William J. Taylor, M.D. Reprint. 1894.

Text-Book of Abdominal Surgery, a Clinical Manual for Practitioners and Students. By Skene Keith, F.R.C.S., Ed., assisted by George E. Keith, M.B., C.M. With illustrations. Philadelphia: J. B. Lippincott Co. 1894.

Text-Book of Medical and Pharmaceutical Chemistry. By Elias H. Bartley, B.S., M.D., Professor of Chemistry and Toxicology in Long Island College Hospital, etc. Third edition, revised and enlarged, with 84 illustrations. Philadelphia: P. Blakiston, Son & Co. 1894.

Amputation of the Entire Upper Extremity (including the Scapula and Clavicle), and of the Arm at the Shoulder-Joint; with Especial Reference to Methods of Controlling Hemorrhage with a Report of one Case of the Former Amputation and Four of the Latter. By W. W. Keen, M.D. Reprint. 1894.

Clinical Medicine, a Manual for the use of Students and Junior Practitioners. By Judson S. Bury, M.D., Lond., F.R.C.P., Senior Assistant Physician to the Manchester Royal Infirmary. With numerous illustrations and plate in colors. London: Charles Griffin & Co. Philadelphia: J. B. Lippincott Co. 1894.

Original Articles.

THREE YEARS' EXPERIENCE WITH SANITA-RIUM TREATMENT OF PULMONARY DIS-EASES NEAR BOSTON.¹

BY VINCENT Y. BOWDITCH, M.D.,

Assistant Visiting Physician at the Boston City Hospital; Assistant in Clinical Medicine at the Harvard Medical School.

(Concluded from No. 2, p. 30.)

I HAVE thus given you, gentlemen, the results of three years' work in a special direction. That the amount accomplished is small I am well aware; but I can, at any rate, say I have given you my honest and sincere impressions, and have endeavored, as far as possible, to leave out the so-called "personal equation."

I believe that the highest aim of our profession should be the aid we can give to our fellow-men, and to accomplish this, the truth, and nothing but the truth, should be tolerated. Should my conclusions seem to any one unwarranted, I ask only for honest criticism. Certain it is that I feel a pride and pleasure in giving these results, however small, to the American Climatological Association, which has been to me, ever since my connection with it, a source of great profit and pleasure.

RECORDS OF THE TEN CASES OF "ARRESTED DIS-EASE."

CASE I (No. 1). American, single, age forty-six, typewriter. Entered February 9, 1891. Family history rather consumptive. Never strong. Cough for four or five years, with catarrhal symptoms, loss of flesh and strength, night-sweats, dyspnæa, disturbance of digestion, etc.

Physical Examination. — Dulness in both apices, most in right. Respiration harsh in both apices, somewhat bronchial in right. Clicking râles in both apices, with sonorous and sibilant râles more or less diffused over the chest. Bacilli in sputa.

Although the case was not one where special improvement was expected, an entire cessation of active symptoms occurred. Cough and expectoration ceased. The temperature was normal. The digestion greatly

improved. Patient left at the end of four months and resumed work.

Synopsis.—Chronic pulmonary tuberculosis of fibroid variety. Arrest of all active symptoms for over a year, followed by relapse subsequent to an attack of la grippe, the presence of two tape-worms, and illness from swallowing ammonia by mistake.

CASE II (No. 3). American, single, age twentyone, teacher. Entered March 31, 1891. Family history on father's side consumptive. Never strong. Has worked hard. Cough for over a year, with occasional hemorrhages. Night-sweats. Some feverishness. Slight pain across chest. Dyspnœa. Anorexia.

Physical Examination.— Pale. Slight dulness at right apex down to fourth rib, with "crumpling" in this region. In right back dulness slight, and râles throughout. Occasional "crackling" after cough in

lower portion. Bacilli in sputa.

At the end of five months all active symptoms had ceased (cough, expectoration, etc.). The physical signs at the end of that time showed a dry condition at the top of the right lung (dry râle after cough, the

 $^{\rm 1}$ kead at the meeting of American Climatological Association at Washington, D. C., May 80, 1894.

crackling râles having largely disappeared from the lower portion), the general condition being excellent. Against advice the patient left Sharon and returned to the arduous duties of teaching, which she continued for over a year in about the same condition, when after an illness of a few days she suddenly died, the cause of her death being unknown to the attending physician, who reported her previous condition as good.

Synopsis. — Well-marked case of catarrhal pulmonary tuberculosis in right lung. Arrest of all active symptoms for several months, with probable relapse after a year consequent upon resumption of former arduous occupation. Death after sudden short illness, fifteen months after discharge. Cause unknown.

Case III (No. 9). American, married two years, age twenty-six, housewife. Entered June 24, 1891. Family history good. Usually well up to fifteen months previous, when she had la gripps. Never well afterwards. Cough, sputa, night-sweats, loss of flesh and other phthisical symptoms. Laryngeal symptoms, aphonia, etc. Entered City Hospital, where tuberculin was used and tracheotomy performed, in Dr. Geo. B. Shattuck's service, followed by almost complete cessation of symptoms. Patient entered sanitarium at the request of Dr. Shattuck. At time of entrance there was occasional slight cough with little sputa, marked hoarseness.

Physical Examination. — Slight dulness at right apex. Harsh breathing in both apices; most marked in right, where it was rather tubular; an occasional dry click in apex, and in lower right front a few dry râles. Respiration in lower right axillary region rather obscured. The aperture of the glottis contracted, owing to old cicatrices. Epiglottis thickened

with cicatrices.

The patient steadily improved in every way, and at the end of three months was discharged, September 28, 1891, to go back to her husband feeling perfectly well, the physical signs showing nothing more than an occasional faint, dry click at the end of full inspiration on the right side, and somewhat harsh breathing in the apices.

Since that time the patient has been seen once or twice, and reported a year later that she had no cough, although the last time (about a year ago) she had taken a cold and appeared at my office and promised if not better she would come again. As she was a most excellent patient, we have every reason to suppose she recovered, as we have not heard since from her.

In this case, doubtless the large part of the benefit was due to her stay at the City Hospital; but the treatment at the sanitarium, I think, served to supplement the good work already done.

Synopsis.— Pulmonary and laryngeal phthisis. Use of tuberculin in City Hospital, followed by almost complete cessation of symptoms. Cessation of symp-

toms at the sanitarium.

CASE IV (No. 10). American, single, age sixteen. Entered July 1, 1891. Mother died of phthisis one year before, one sister died of hip disease. Others well. Patient well until nine months previous. Phthisical symptoms appeared nine months previous to entrance, after severe overwork and taking cold. Cough; later, sputa, loss of flesh, dyspnæa, malaise, occasional fever, etc.; later, hemopytysis.

Physical Examination. — Anæmic; sclerotics ver-

clear: thin. Faint clicks in right apex; one or twice a "squeak" in left apex. Slightly lessened tone in right apex. Signs persisted for several months, and finally disappeared. Hemoptysis from time to time slight. The cough finally ceased; and on the last examination about a year after entrance only a faint, dry click could be heard in the apices. The patient left June 29, 1892, at the end of a year, having gained seventeen pounds, and feeling perfectly well. Since then she has written enthusiastically of her perfect health, and has a heathful occupation away from her former unhealthy surroundings.

Synopsis. — Incipient phthisis at both apices. Arrest of disease after twelve months' stay at Sharon.

CASE V (No. 20). American, single, age twenty-five. Entered October 6, 1891. Sent by Dr. C. Ellery Stedman. Family history not phthisical. Usually well. Began to have malaise about a year and a half before Intermittent cough for several months. entrance.

Physical Examination. — Slight dulness at right apex. Suspicion of a râle occasionally there, with broncho-vesicular respiration and increase of voice. Later faint râles were heard in both apices, which persisted for a time, as well as the dulness in the right apex. Occasional rise of temperature, especially after fatigue: but there was a steady improvement in symptoms, and just before her departure, six months after entrance, the râles had all disappeared, slight dulness at the right apex and prominence of right clavicle persisting.

Synopsis. — Signs of incipient phthisis in apices of both lungs. Arrest of disease after six months' stay at Sharon. Cough and sputa disappeared. Gain of twenty-eight pounds. The patient continues to write of her perfect health for the past two years, and has moved from her former damp home to one on higher

CASE VI (No. 24). American, single, age nineteen, factory operative. Entered November 29, 1891. History of probable pulmonary disease in the mother's family; the mother as a young woman was supposed to have pulmonary disease.

Patient had diphtheria six or seven years previous to entrance, and throat had been delicate since. Fairly well up to four years previous to entrance, when she began to work in a factory where much dust was inhaled, and frequent malaise was complained of. Coughed intermittently for two years, mostly in the morning, with rather scanty sputa occasionally streaked with blood. Once a slight hemorrhage. Pain in the upper portion of chest on both sides. Anorexia, loss of flesh and strength. Irregular menstruation. Great nervousness.

Physical Examination. — Except for pallor, a look of weakness, lack of proper expansion of the chest, tenderness upon percussion at the apices of both lungs and later a lessened tone in the left apex, there was little to be found in the chest; but the cough, with occasional bloody expectoration persisted for some time with varying intensity.

There was a general and steady improvement in all the symptoms. She gained eight pounds. The shape and expansion of the chest had markedly improved; and, finally, at the end of three months, as the cough and expectoration had ceased, and the patient persisted in going, contrary to advice, she was discharged.

Although the physical examination revealed only slight evidence of pulmonary disease, yet the cough and occasional hemorrhages, loss of flesh and strength, with slight fluctuations of temperature, rendered it a very suspicious case; and it was so deemed by Dr. Sheldon, of Lynn, whose patient she had been. has since married, and at last accounts was very well.

Synopsis. - Case with evidences of incipient pulmonary disease (cough, bloody expectoration, loss of flesh and strength, etc.). Arrest of disease.

CASE VII (No. 27). American, single, age twentyeight, tailoress. Entered April 13, 1892. Family history somewhat phthisical. Never very strong. Subject to cough since fifteen. Working hard all winter. Slight cough for several weeks, with bloody sputa and slight hemoptysis at times. Pain in left front at times. Feverish at first. Dyspnæs. Loss of flesh and strength, etc.

Physical Examination. - Slight variations in pitch Copious sputa. Pain in right chest at first. Loss of in both apices, with obscure moist râles, and "squeak" in left apex and to a less degree in right apex. In backs obscure "crumple" heard in tops, and extending downwards somewhat. The signs persisted with some variations for some months, and from time to time there was slight hemoptysis; but the râles finally disappeared, and the cough and expectoration ceased. Gain of eight and a half pounds. The patient left the sanitarium September 28, 1892, at the end of six months, feeling perfectly well, and remained at her home in Canada for the ensuing winter and spring. She has since married, lives in the country, and writes of her perfect health.

Synopsis. — Signs of incipient phthisis at both apices. Arrest of disease after six months' treatment at Sharon. CASE VIII (No. 28). English, single, age twenty-three, domestic. Entered April 14, 1892. Family history favorable. Fairly well up to three years before entrance. Had an attack of bronchitis and general debility. Recovered. One year before entrance had severe cold, with tightness and pain across chest, which symptoms persisted up to three months before entrance, when another cold caused a cough, which persisted with scanty expectoration. Loss of flesh and strength. Anorexia. Irregular menstruation.

Physical Examination. — Pale, with a tired look. Right clavicle prominent. Slight dulness in right apex, with prolonged expiration in front and very faint "crumpling." Just above the line of spine of right scapula a few dry râles. Voice increased in this region. Heart rather rapid. No murmur.

The patient steadily improved after the first month, at times raising some bloody mucus, and left at the end of five months with an entire absence of cough and expectoration, apparently well, the signs in the right apex showing a dried-up process in the lung. She has remained well ever since.

Synopsis. — Signs of incipient phthisis at apex of right lung. Arrest of disease after five months' stay at Sharon.

CASE IX (No. 37). Nova Scotian, single, age twenty-four, dressmaker. Entered October 8, 1892. Sent by Dr. R. W. Lovett. Family history negative. Ten mouths before entrance, developed cough, after general debility for many months previous. Was in City Hospital, and there had all the symptoms of tubercular trouble in the lungs and intestines, and was sent to the Channing Home to die. Improved greatly, and finally came to Sharon.

Physical Examination. — Pale; dark under the eyes. Percussion not remarkable. Faint bronchovesicular respiration, and faint click or crumple upon full inspiration in right apex. In the lower right axillary region fine crepitation, probably pleuritic. patient gained in weight, and steadily improved in every way. The cough and expectoration ceased, the temperature was normal, and at the last examination the lungs both expanded well, only a few dry râles being heard at the end of long inspiration, with prolonged expiratory murmur, the fine faint crepitation in the lower right axillary region being still present, but less marked than before. The patient felt "perfectly well, better than for many years before." She left at the end of four months, and has continued to do well

Synopsis. — Phthisis involving right lung. Very marked signs, with marked amelioration before entrance. Complete arrest of disease after a stay of four months at the sanitarium.

CASE X (No. 41). American, single, age twenty. Entered January 14, 1893. Sent by Dr. H. P. Jaques. of Milton. Mother died of phthisis two and a half years before patient's entrance. Mother's family con-Never very strong. Uterine trouble for several years, and dyspeptic symptoms for a long time. Cough began about six or eight months previous to entrance. Improvement upon changing from her damp home to a dry one. Sputa variable, and at times streaked with blood. Night-sweats severely. Acute feverish attack after removal to Milton, where evidence of apparently unresolved pneumonia was found at the base of right lung behind (dulness, faint bronchial breathing, faint moist râles, etc.). These signs persisted for some time, but slowly improved. Bacilli were found in the sputa. time there were questionable faint râles heard in the right apex.

In spite of the marked improvement in the pulmonary symptoms at the end of seven months, the uterine symptoms persisted so markedly I advised operation, and the patient was removed to the New England Hospital for Women, where she was relieved almost entirely of her previous dysmenorrhea. The appetite and digestion after her return to Sharon were "better than ever in her life before," and the cough and expectoration finally ceased entirely, and the temperature became normal. There was a gain of eighteen pounds. After an eleven months' stay the patient went to live in the country with an aunt who has a healthy, dry house; and she writes enthusiastically of her perfect health. The last examination showed only a shade of dulness in the lower right back. Only after cough could a faint, dry crepitation be heard.

Synopsis — Tuberculosis at base of right lung. Arrest of disease after an eleven months' stay at Sharon.

THE CANADIAN QUARANTINE STATION OR Grosse Isle in the St. Lawrence below Quebec, is reported as being in perfect order and one of the most extensive of modern quarantine plants. There are forty buildings with a capacity of housing three thousand persons and the effects of one thousand immigrants can be thoroughly disinfected in twenty-four hours. Dr. Montizambert, Superintendent of the Canadian Quarantine System, is in charge of the station.

1 Read before the Norfolk District Medical Society at Brookline, March 27, 1894.
2 "Traitment de la Phthisie Pulmonaire," Paris, 1892.
3 Olimatic Treatment of Consumption.

CLIMATIC THERAPEUTICS IN THE TREAT-MENT OF PULMONARY TUBERCULOSIS.1

BY ROWARD O. OTIS. M.D.

MUCH of the vagueness and misconception existing regarding the use of climate in the treatment of pulmonary tuberculosis, arises, I believe, from two principal causes: First, a failure to appreciate the supreme importance of the hygienic management of the disease; and, second, a false conception of the effect of climate per se, and often a too exalted idea of its value, and a blind confidence in it as a panacea. To conduct a case of pulmonary tuberculosis to a successful issue requires infinite attention to details, constant vigilance, and a command of every resource, hygienic, climatic, hydropathic, and medicinal — the latter of the least importance. I am a thorough believer in the great value of climate in the treatment of this disease, and yet I am as thoroughly convinced that it is but one factor, although a very important one, in the complete management of the disease. "Climates are not specific agents," says Daremberg,2 "capable in themselves of curing tuberculosis, but simply aids to a method founded upon abundant and careful alimentation, and upon an out-of-door life and rest." "I would," says a specialist in the treatment of pulmonary tuberculosis at a well-known health-resort in a private communication, "take my son or daughter even now to Boston, and there give them the advantage of proper regulations of diet, rest, exercise, out-of-door life, hydropathic measures, rather than to depend upon the best climate in the world." "A change of climate," says Lindsay, "is likely to prove efficacious only when it is regarded as a preliminary step to a change in the mode of life." 8

One of the most woful mistakes, and yet a most common one, is to send a tuberculous patient to a climatic resort where he will be left practically to himself, with no careful and constant supervision of his daily life; what and how he shall eat; when and when not he shall take exercise; how he shall care for his sputum to avoid reinfecting himself and infecting others; what kind of a sleeping apartment he should occupy; what he should do when he has a rise of temperature; and all the many details necessary for him to know in order to obtain the best available results from his climatic cure. I have seen a patient at one of our well-known health-resorts coming down to the hotel dining-room table for his meals, with the fever of the septic stage of the disease, wasting his little strength in this way when he ought to have been conserving it by rest in bed. I have seen a patient, at the same resort, sitting on the hotel piazza and expectorating his bacilli-laden sputum upon the ground about the hotel, a menace to every occupant of the house; and I do not doubt that among those, not tubercular, who frequent the resort for other reasons, often as "caretakers," there are cases which have become tuberculous in this way. Recently a physician at one of the resorts told me that he was consulted by a consumptive, who said his physician at home — a man of reputation in a large city — sent him there with the advice that he need place himself under no medical care, but simply follow out the directions he received at home; as if this disease, with its infinite variations and changes could be successfully managed a thousand miles away!

When climate is so misunderstood and abused in this way, is it any wonder that the results of its use are disappointing? Apply the same methods to the use of any of our most valuable medicinal agents, and what would be the result?

Let us clearly keep this fact before us, that climate is but one factor, although a most important one, in the treatment of pulmonary tuberculosis, and unless accompanied by good hygienic conditions, wise and constant medical supervision, it will, in many cases, prove but a delusion and a snare. Hence the importance of well regulated and appointed sanitariums in the climatic resorts. I am fully in accord with Solly's 4 statement that the percentage of the cured and benefited in these institutions is double that obtained in open resorts. "Experience has shown that nowhere can the necessary daily regulation of the patient's life and habits be so successfully carried out as in a sanitarium, and that the most favorable results in combating the disease have been attained in institutions devoted to this special purpose." 5

I am thoroughly convinced from my experience and observation that the most successful treatment of this disease in the future, as, indeed, it has been in the past, will be in the sanitariums, and instead of the few that now exist in this great country, hundreds will arise. Look at the marvellous results obtained by Brehmer in his great sanitarium at Göbersdorf, and the equally favorable ones of Dr. von Ruck at the Winyah Sanitarium in Asheville, and of Trudeau's at Saranac. So long, however, as so many of our tuberculous patients do go to climatic resorts where no sanitariums exist, or who will not, from mistaken ideas, enter one, we can do much by wise advice, if we will ever bear in mind the exceeding importance of a carefully regulated life for the consumptive in every particular, and place him under a reliable and skilful physician at the resort we may select for him. If we are not sure that these conditions exist, then we should not send him there. With these preliminary observations, without which what I have to say upon climatic therapeutics would be both misleading and of little practical value, I will now consider the effects of the use of climate in the treatment of pulmonary tuberculosis and the condition and stages, both of the individual and the disease, which are most likely to be benefited by it. I shall presuppose that those favorable conditions exist for the proper management of the disease, which I have tried to impress upon you as of paramount importance: and let us always remember that a less ideal climate is rather to be chosen and will produce better results if these other conditions can be more perfectly fulfilled.

In the application of climate to this disease we must remember the principal influences which have been insidiously at work in rendering the lung tissue a favorable soil for the bacillus. In-door life, and in consequence insufficient pure air, malnutrition, lack of physical exercise, defective lung expansion, insufficient sunshine, a damp soil, worry; how much can we depend upon climate to reverse and correct these vicious influences? First, we can give our patient pure, dry, out-of-door air, and surround him with an aseptic atmosphere. Second, we can give him plenty of sunshine. Third, we can place him under such climatic conditions as will induce a better circulation, promote

Hare: System of Practical Therapeutics, vol. I, p. 431.
 Circular of Adirondack Cottage Sanitarium.

tissue metamorphosis, improve digestion and so increase nutrition and constitutional vigor. Fourth, we can give him attenuated air to breathe (mountain air), which will promote chest expansion and a full, free, and constant lung ventilation. Fifth, the out-door life will naturally lead to physical activity in cases suitable for it. Sixth, we remove him oftentimes from the vicious conditions which cause his worry, and place him where he will have an attractive environment and under influences which conduce to tranquillity of mind. An abundance of sunshine in itself will often go far. towards bringing about this result. Who ever saw a melancholy Italian or negro under their sunny skies? And, lastly, we can give him a dry soil. With some patients means of occupation must be present - sometimes from necessity, and sometimes as a purely therapeutic measure; for to do something, however little, brings hope and health to many a patient, while to sit idly by and await the expected cure, even in the best climate, is only to await disappointment and a fatal issue. Sir Andrew Clark's advice to his patients, to work to the measure of their ability, is sound.

If we will bear in mind the unfavorable conditions and mode of life which produce the disease, and study the conditions and mode of life which exist in those localities which are comparatively exempt from it, we shall be a long ways towards possessing the key to the proper application of climatic therapeutics. It is well to be reminded that climate anywhere, even as unfavorable as ours is, when wisely and fully utilized in connection with good hygienic management possesses possibilities of cure. Tuberculous patients - plenty of them - get well in any and all climates, and often without knowing that they were tuberculous. A year and a half ago or more, a young woman consulted me for a cough and general malaise, in whom I discovered unmistakable evidence of apex catarrh. Not long ago I examined her again, and found that all signs of disease had disappeared and she seemed to be in perfect health. The only climatic change she was able to take was a summer outing. All of you, doubtless, can cite similar instances.

Equally important is it for us to bear in mind that the climatic treatment is not applicable to all cases and all stages of pulmonary tuberculosis. This ought to be a self-evident truth, but from the lamentable and disastrous mistakes physicians make in this respect, it is evident that it is not. To send a tuberculous patient away from home, who has drifted into a septic condition for instance, with fever, anemia, and an irritable heart, is to shorten his life probably, and cause him and his friends unnecessary suffering and distress, besides bringing discredit upon climatic treatment in general. At home and in bed is the place for him.

The question of what cases are proper and suitable to send away for the climatic cure is one which must first be settled, and it is one which must be thoroughly studied in connection with each individual case. The constitution and vigor of the patient; his inherited tendencies; the activity and extent of the disease; his age, habits, temperament, material and social condition, must all be taken into account. We must possess a thorough knowledge of the disease in general in all its phases, and in each individual case, together with its rate of progress; a thorough knowledge of the individual himself; and a thorough knowledge of climates in general; and then are we in a condition to

apply wisely, or refrain from applying unwisely, our climatic therapeutics. Incidentally I would here remark that we ought to use all our efforts and skill in detecting the disease at the very earliest moment, the time when it is most amenable to treatment. Why lose precious time in waiting for marked dulness and râles when a slight lack of resonance, a bit of roughened respiration, a back now and then, and a condition of malnutrition indicate plainly enough that the disease already exists? A pity it is that so few cases come to us in the pre-tubercular or early tubercular stage, when we could use our climatic therapeutics to the greatest advantage; but unfortunately the hope which "springs eternal in the human breast" leads in this case to a disregard, on the part of the patient, of the inception of the disease and a neglect of obtaining timely medical advice.

"If we have to define the stage of the disease," says Lindsay,6 "most suitable for climatic treatment, we should say the quiescent, as distinguished from the active stage, rather than any of the three stages familiar to medical literature. In other words, the first and third stages, provided they be chronic and inactive." The second stage, or the stage of septic infection, when the disease is active and accompanied with much pyrexia, is regarded, I think, by most authorities as unsuitable for the climatic treatment; and yet if patients in this stage even could be in a climate such that they could lie on a couch all day out of doors and have equally as good treatment as at home, it seems to me there would be a chance of materially shortening it and more quickly arresting the active morbid

Having then taken into consideration all these questions and decided that a given case is a suitable one for the application of climatic therapeutics with the hope of a cure or arrest, what climate will you select? We have practically but two kinds to choose from, the low and the high. Each must possess certain common characteristics: purity of the air, abundance of sunshine, dryness of the air and soil; and in addition, the higher possesses rarefaction of the air, greater diathermancy, and a more tonic effect. The majority of cases which are proper to be sent away at all, can, I believe, be sent to the medium and high altitudes, for I do have the most thorough conviction that altitude, with all its means, materially increases the chances of a cure, other things being equal. Not all cases are suitable for the altitude treatment, some on account of the general condition and some on account of the local. A certain amount of strength and vigor are a prerequisite, I think, especially in the higher altitudes; but I believe the chances are better for a cure or arrest in cases proper for it, than in climates without altitude. One important and common cause of pulmonary tuberculosis, I believe, is insufficient lung expansion and ventilation. The patient may never have learned to breathe properly and fully, and the air he has breathed has been impure indoor air. Now, it is most essential that these conditions should be reversed as soon as possible. He should expand his lungs with pure aseptic air, and that is just what altitude compels him to do. Nature supplies him with the most natural and complete method of pulmonary gymnastics. "The use of natural, rarefied air," says Williams," "such as we obtain from diminished barometric press-

ure at high altitude stations yields wonderful results in phthisis." The local effects upon the chest and its contents have been observed to be as follows: hypertrophy, or more complete development of the healthy lung tissue; compression of the diseased parts, through emphysematous dilatation of the neighboring portions of the lung. And in consequence of these changes there is increased thoracic expansion accompanied by diminution of the number of respirations, and a slow-ing of the pulse. The tonic effect of altitude is increase of appetite, improvement of sanguification and general nutrition, strengthening of the heart and circulation, raising of muscular and nervous energy and of activity of the skin.8

As I have before said, to the majority of cases suitable for climatic treatment the medium and high altitudes are applicable. The high altitudes have been found beneficial (1) in incipient phthisis; (2) cases of imperfect expansion of the thorax; (3) hemorrhagic phthisis; (4) chronic pleurisy and unresolved pneumonia; (5) patients with more advanced disease showing some consolidation, but no excavation nor any serious disturbance; (6) cases of cavity, if not large and the disease is quiescent. As to anemia and the "fibroid phthisis" of Sir Andrew Clark, authorities differ. As to the latter cases I agree with Lindsay, that "if there be a fair amount of functionally active lung, the high altitude climate may be tried."

The contra-indications to the high altitudes are: (1) Advanced age; (2) septic condition, when the disease is active and pyrexia constant; (3) double cavities with or without pyrexia; (4) cases in which there is great irritability of the nervous system; (5) diseases of the kidney, liver, or heart; (6) diabetes; (7) great loss of pulmonary tissue; (8) emphysema; (9) tubercular laryngitis. Observers differ as to the least degree of elevation at which the special characteristics of altitude are manifested, probably, as Solly 10 says, it is about 2,500 feet. I should include in the medium altitudes places of from 1,500 to 3,000 feet, and in the high from 3,000 to 7,000 feet. First, let us consider the available resorts of medium altitude some of which can be utilized the year round, which is better; and others for only portions of the year. In this country we have various places in the highlands of the great Appalachian System. For warmer portions of the year and possibly for the whole year, if proper accommodations existed, we have our own White Mountain region represented by such places as Bethlehem and Maplewood 1,459 feet above sea level; Dublin 1,600 feet high; Jaffrey near by; Gilmanton, Whitefield, Jefferson, and others possessing about the same conditions. At Bethlehem and Maplewood the mean temperature of nine seasons for the three summer months was 64.91° F.,11 the relative humidity 65.51°; and there were on an average only two days each month when an invalid could not go out with safety and comfort. The accommodations are good and abundant.

At Dublin the mean temperature for the four summer months of last year (1893) was 62.45° F.; the average number of clear, partly cloudy, and cloudy days for each of these months was 14.7, 6, 7, or 27.7 days per month when an invalid could presumably be

Climatic Treatment of Consumption.
 Pulmorary Consumption.

<sup>Weber: Croonian Lectures on the Hygienic and Climatic Treatment of Chronic Pulmonary Phthisis.
Knight, Weber, Williams, Lindsay, Solly.
Hare: System of Practical Therapeutics, vol. 1, p. 418.
Geddings: Bethlehem and Maplewood, reprint from the Climatologist, 1891.</sup>

out of doors. The prevailing wind was south-west. The average death-rate for three years (1889-91) was 1 to 99.9, and the average age 72.6 years. Pulmonary tuberculosis is said to be almost wholly unknown in the town. The summer life here is essentially a cot-

Next we have various places in the Adirondacks which Osler 18 says he prefers to other American resorts for early cases. There are very many places of an elevation of from 1,500 to 2,000 feet; Lake Placid, 1,863 feet; Blue Mountain Lake, 1,800 feet; the Lower St. Regis Lake (Paul Smith's), 1,600 feet; Saranac Lake, 1,752 feet. At the latter place is situated the admirable "Adirondack Cottage Sanitarium," with a capacity for 75 patients who have the skilful advice and great experience of Dr. E. Trudeau, who has done so much work in this department of medicine. "Only those who are in the first stage of consumption or convalescing from other pulmonary diseases, or in the opinion of the examining physicians are likely to be benefited by the sanitarium treatment, and can afford to pay no more than the low price demanded here for board, are admitted." All medical attendance is free, and five dollars a week is charged for board and lodging.

The Asheville Plateau has become well known as a resort of medium altitude, especially through the work of Dr. Karl von Ruck, whose admirably conducted sanitarium is situated in Asheville, which is 2,350 feet high. The mean winter temperature (for four years, 1888-92) is 45.79° F., and the mean summer temperature 65.89° F.; the mean relative humidity is 66.78°, and the mean number of days without sunshine per month is 0.75. Dr. von Ruck, from a record of 500 cases reports a cure or arrest in 35 per cent., and

improvement in 56.15

In South-western Texas and Southern California, inland, are places of an elevation of about 2,000 feet. Boerne, 1,300 feet high, about thirty miles north-west of San Antonio, Texas, is a well-known health-resort in that State, as is also San Antonio itself. The western part of Kansas consists of an extensive plateau of from 1,500 to 4,000 feet, and a mean annual temperature of 49° F. Kansas is said to be a very healthy State and highly favorable to consumptives.16

Europe is too far away to be available ordinarily, although there are many well-known resorts for pulmonary tuberculosis of medium altitude. Montreux, about 1,200 feet high, and the more elevated regions above it; Les Avants, 3,500 feet; Glion, 2,200 feet; and others are said to give favorable results. I know personally one patient with first-stage phthisis, who seems to have recovered at Les Avants. Then there is Görbersdorf, 1,700 feet high, with its famous sanitarium; and many others in the Pyrenees and lower

Of the high altitudes I shall speak only of that portion of the eastern slope of the Rocky Mountains lying between the elevation of 4,000 and 8,000 feet, embracing portions of Wyoming, Colorado and New Mexico. Practically the high altitude region is represented to us by Colorado, and is the only region of which I can speak from personal experience. The marvellous results obtained by the high altitude treatment at Colo-

rado Springs and Denver, from which places we have the fullest and most exact reports of cases, are doubtless familiar to you. And when we have more sanitariums constructed on the most approved principles in the Colorado region, the results, I believe, will be still more favorable. Colorado Springs, the elevation of which is 6,022 feet, has a mean annual temperature of about 47° F. and a relative humidity of about 48°. For the three years 1884 to 1887 inclusive, during January and February, there were 106 clear days, 3 cloudy, and 7 stormy days; while in Boston at the same time there were 53 clear, 59 cloudy, and 78 stormy days.17 According to Solly, during the three winter months, the cloudy days do not average more than three a month; 15 and for five years the average number of clear days at this place was 194, fair 128, and cloudy 43, so that for 322 days the invalid can be out of doors and have sun. A day of winter sunshine is about eight hours. Nearly all the other meteorological conditions are also highly favorable; the soil is very dry and "the natural drainage is perfect." There are many other places, in the region about, which probably possess nearly as good conditions as Colorado Springs, but they are not so well known, save Denver, which has the objection of being a large city; but Colorado Springs has probably the best accommodations. I might mention Manitou near Colorado Springs, Idaho Springs, Salida, Georgetown, Boulder, Pueblo, and Estes Park. This latter place is most beautifully situated in close proximity to the mountains and is about 7,000 feet high. With proper accommodations it would be an ideal high altitude resort, and I trust the time will soon come when it will afford well-appointed sanitariums. In Wyoming, we have Cheyenne, 6,052 feet high, with a mean temperature not lower than 43.6°, 19 and in the north-western portion the famous Yellowstone Park, 6,000 feet high.

New Mexico offers many resorts of high altitude warmer a little than those in Colorado, but otherwise possessing about the same characteristics. I will mention Las Vegas, 6,500 feet high, whose mean annual temperature is 51°, and the humidity about 45; and Santa Fé, 7,000 feet high, of about the same temperature and humidity. The air is very dry. "The skies are commonly clear and the sunshine fine. . . . About 280 days each year are observed as clear and fair." 20 I am informed by Dr. Atkins, of Las Vegas, that in both these places there are good accommodations at reasonable rates and good medical attendance. Albuqueque, over 5,000 feet, and Silver City, between 5,000 and 6,000 feet, are also classed, by Dr. Atkins in a private communication, among "our best towns." Just beyond the southern border of New Mexico in Texas is El Paso, which has "one of the dryest climates in the Union," says Dr. Taylor.21 It is 3,950 feet high, has an average temperature of 55.5° F., and a relative humidity of 48; the number of clear and fair days are 380. There are great daily and yearly variations of temperature, but this is more or less the case in all high altitude stations; the accommodations are fairly good, I should think.

The Engadine Valley is the great high altitude

<sup>Dr. Hamilton Osgood: private communication.
Practice of Medicine, p. 251.
Circular of the Adirondack Cottage Sanitarium.
Karl von Ruck: The Climate of Western North Carolina, reprint.
Evans: Phthisiology.</sup>

E. O. Otis: Hints to Physicians sending their Consumptive Patients to Colorado, Boston Medical and Surgical Journal, 1887, vol. exvil, No. 24.
 Invalide' Day in Colorado Springs, reprint, 1888.
 Evans: Phthisiology.
 Atkins: The Health of Las Vegas, New Mexico.
 The Climate of South-western Texas, etc. Transactions of the American Climatological Association, 1888.

resort for pulmonary tuberculosis in Europe; and Maloya, Samaden, Wiesen, Pontresina and Davos are the principal places for invalids, all of which places I have had the pleasure of visiting. The elevation is from 5,000 to 6,000 feet. Davos, 5,124 feet high, is the best known and most frequented of them all. The mean annual temperature is about 37° F., and the mean relative humidity 78. In the yearly average one may reckon 99 clear days, 94 dull, and 17 foggy. 22 It is at its best in winter, owing to the great purity of the air, the number of clear days, and the calm atmosphere.28 The accommodations are excellent and under careful medical supervision; and in this respect it possesses a great advantage over most of our own high altitude health-resorts. For an attractive account of the life there I will refer my readers to the papers of the late J. Addington Symonds, who lived many years there. I have a vivid recollection of the exhibaration produced by the deliciously pure dry air and the warm

In a comparison of the results obtained in high and low (less than 2,500 feet) climates, Solly gives the following résumé: 24

LOW CLIMATES.

							No. of Cases.	Cured.	Benefited	
All stages							4,167	10%	36%	
First stage		•					714	20	44	
			1	HI	GН	C	LIMATES.			
All stages							709	361	74	
First stage							850	62	814	

As to the length of residence in the selected climate, I can only repeat what I wrote in a paper upon Colorado several years ago,: 25 "In whatever climate one finds his lung trouble improving steadily, there he should remain, not only until all signs of mischief disappear, but, in many cases at least, as long as he lives."

In closing this paper I cannot give a better summary of the value and limitations of climatic therapeutics than to quote a sentence from Lindsay:26

"Climatic treatment," he says, "is not a complete therapeusis, and will be only a snare if so interpreted. It is a means to an end, not an end in itself; a powerful adjunct to hygienic and medicinal measures, not a substitute for them; a channel of escape from vicious habit and abnormal mode of life, not a mysterious remedy or an unfailing specific. Much observation and inquiry are still indispensable before its sphere and precise limitations can be fixed with exactness, and the medical profession must be prepared in the future, as they have been in the past, to face much obloquy in their application of a remedy which still defies scientific precision, in this as in so many other departments of knowledge."

"Science moves, but slowly, slowly creeping on from point to point."

Handbook to the Health Resorts in Switzerland, by M. Loetscher,

Handbook to the Health Resorts in Switzerland, by M. Loetscher, M.D., Zurich.

Von Ziemseler's Handbook of General Therapeutics. Weber: Treatment of Disease by Climate.

Hare: System of Practical Therapeutics, Art. Climate.

Hints to Physicians sending their Consumptive Patients to Colorado, Boston Medical and Surgical Journal, 1887, vol. exvii, No. 24, p. 569.

p. 569.

Climatic Treatment of Consumption.

TUBERCULOSIS IN CATTLE.1

BY FREDERICK H. OSGOOD, M.R.C.V.S., Professor of Veterinary Surgery in Harvard University.

TUBERCULOSIS in cattle is a subject of equal importance, not only to the veterinarian, but to the medical man and public generally. Its eradication from the animals from which we derive so large a portion of our nutrition is of the utmost importance from the standpoint of public health. The subject has not been considered of enough importance in our own State until 1892 to receive even passing attention from the government, when a bill was passed entitled "An Act to More Effectually Prevent the Spread of Tuberculosis among Cattle." Under the provisions of the act, an earnest endeavor has been made by the "State Cattle Commission" to do all in their power towards the prevention of the disease; but, as in all matters of public health, the community from which the legislators are drawn are not sufficiently informed upon the subject to fully understand or appreciate the importance of radical measures in such a disease. Consequently, the officers upon whom the enforcement of this law depend are prevented by lack of efficient legislation from carrying on the work in a manner by which the best results could be obtained.

The insidious nature of the disease has much to do with the comparative slowness with which professional and public attention has been directed to it; but the strides which it has made and the hold which it has gained upon our neat stock render it the most important question affecting the future well-being of the bovine species.

PREVALENCE.

Owing to the facts that up to within a very short time we have been unable to make a reasonably sure diagnosis, and that we have no systematic inspection of our abattoirs and slaughter-houses, there are no available statistics as to the prevalence in our immediate vicinity. All we can do is to reason by analogy from such statistics as are obtainable. The following abattoir statistics showing the percentage of tuberculous animals are of value in this connection:

Prussia .						6.3 %
Berlin .						12.
Dresden .						14.4
Bromberg						26. 2
Upper Siles	sia.					9.5

In England, during an outbreak of contagious pleuropneumonia extending over a period of sixteen months (1890-91), there were slaughtered, as being infected or having been exposed, 12,000 animals, all of which, under the direction of the Department of Agriculture, were subjected to a critical post-mortem examination by skilled veterinary surgeons for the purpose of ascertaining the prevalence of tuberculosis. From these examinations were derived the following results:

Cows								16.09 %
Bulls					•			1.53
Cattle o	76 F 0	ne y	ear					2.77
Cattle p	nder	one	Year					1.2

Of the 12,000 examined, 12.22 per cent. were found tuberculous. In some herds the rate was as high as 75 per cent., and only a few herds were entirely free. Earl Spencer's herd of Jerseys, containing twenty odd animals, was tested by tuberculin, and all reacted.

 1 Read before the Norfolk District Medical Society at Brookline, March 27, 1894.

Post-mortem examination of the entire herd confirmed the diagnosis.2

At a recent conference of the Sanitary Association of Scotland, Professor Wright presented estimates that tuberculosis in cows causes an annual loss to the owners of dairy stock in Scotland of £440,000 sterling, or \$2,200,000.*

Professor Janson, of Tokio Veterinary School, in his "Report of the Contagious Diseases of the Domestic Animals in Japan," says: "Tuberculosis is very frequent in mankind: but it has never been witnessed among the native cattle, though it prevails among those imported into the country, especially in the Devons, Ayrshires, Americans and their crossings with the indigenous breed. According to the abattoir statistics, 50 per cent. of the American cattle and their crossings are tuberculous." 4

From November 1, 1888, to November 1, 1889, Dr. Faville examined 5,297 cattle killed in the vicinity of Baltimore, 159 of which were tuberculous, more than 3 per cent.

Any reliable estimate of the percentage of tuberculous animals in a given area cannot be given for reasons before mentioned, but that it exists to an alarming extent none deny. From my own experience, the percentage is variable in different herds bearing a direct ratio to the surroundings and conditions under which such animals have been perpetuated and kept. From the results of 163 examinations by tuberculin test, which I have recently made among cattle widely distributed, which had been periodically examined by physical examination (at which time any animals manifesting marked symptoms of tuberculosis had been destroyed), 29 showed marked reaction, 16 of which were apparently in the pink of condition.

In one instance a family herd of five animals, kept especially to provide the children with a pure milksupply, all reacted, and post-mortem examination confirmed the diagnosis.

The causes are exciting and predisposing, both of which seem in a manner to be essential, owing to the fact that the bacillus is so exacting as to suitable conditions for its development and propagation, and each of which must be provided against, so far as possible, in any plan of prophylactic treatment before it will prove efficacious in the suppression of this disease. Koch has demonstrated that the sole exciting cause is the bacillus, but there are many accessory or predisposing causes which are important to consider.

While the preponderance of evidence points clearly to the conclusion that tuberculosis is not, as a rule, congenital, we recognize at the same time that it may be, and occasionally is. So much cannot be said as to the transmission of a predisposition or diathesis.

INFECTION.

Infection may, and usually does, occur either through the respiratory or digestive tract, while it is not impossible through the sexual organs or skin. That any portion of a tuberculous animal or any secretion of such animal, if it contained the bacilli, would be a source of danger, all agree.

That the milk from any animal suffering from tubercular mammitis always contains the bacillus. The re-

Beport P. H. Brice, M.D. (P)
 Veterinary Journal, November, 1893, p. 391.
 Fleming's Journal, January, 1894, p. 45.
 From Inspection of Meat and Milk, by A. W. Clement, Maryland Medical Journal, February 1, 1890.

sult of scientific experiment shows that the milk of an animal suffering from tuberculosis, even though the udder is not involved, may, and occasionally does, contain the bacilli. It is not uncommon to find tuberculosis in calves, in which cases the lesions are far more common in the digestive than in the respiratory tract, leading us to the conclusion that infection took place through this channel.

DISSEMINATION AND PROPAGATION.

Infection by direct inhalation is, I believe, the most common among cattle, regardless of the numerous statements of those who have confined their observations principally to the human family. If such is not the case, through what channel does the germ gain entrance? Certainly it is only a matter of time, under suitable conditions, after the introduction of a tuberculous animal into a supposedly healthy herd, before a large percentage become victims of the disease.

Since by far the greatest number of cases of tuberculosis in milch cows apparently begin in the lungs, it is fair to presume that infection occurs as frequently, if not more so, from inhalation of dust charged with

Koch says: "Animals produce no sputum, so that during their life no tuberculous bacilli gets from them into the outer world by means of the respiratory passage. In the excrements of tuberculous animals, the bacilli appear to be only exceptionally present. On the contrary, it is a fact that the milk of tuberculous animals can cause infection. With the exception of this one way, therefore (that is, through the milk), the tuberculous virus can only have effect after the death of the animal, and can only cause infection by the eating of the meat." But the veterinarian, who is familiar with the lesions in the respiratory organs and the general symptoms presented, must take exception to any such misleading statement, which is capable of doing incalculable harm if allowed application in practice in the arrangement of our cattle.

The lesions in the lungs not infrequently show ulceration of the wall of the tubercular nodule, by which a communication is formed with the nearest bronchial tube, into which portions of the contents are evacuated and subsequently expelled through the nostrils. The mucous membrane of the larynx, traches and bronchial tubes may all be the seat of tubercular nodules, which undergo softening when they are expelled through the same channels. From the anatomical construction and position in which the head is held, it is not uncommon to find a profuse discharge of semi-purulent mucus from such animals. Again, experiments made by equally careful investigators seem to point to the fact that the nasal, vaginal and fecal discharges frequently contain the bacilli when the respective organs are tubercular. In six cows suspected of intestinal tuberculosis, "Siegen" has in four of them detected Koch's bacillus in the feces. In examining the mucopurulent discharge from the vagina of four cows suspected of suffering from uterine tuberculosis, he found Koch's bacillus in two of them; and the autopsy of the animal fully confirmed the diagnosis.6

Such infected discharges, having gained exit from the body, are lodged upon the floor, manger or other fittings of the stable, where they remain until they become thoroughly dry (retaining at the same time their virulence), when they become pulverized and float

[•] Report of Paris Congress for the Study of Tuberculosis, 1893.

about as dust in the atmosphere, and liable at any moment to gain access to the system of other animals, where, if conditions are favorable, the same process

is repeated.

Further, it is not at all unusual in our modern stables to see a common trough running in front of the animals, from which they all drink. This can be easily remedied if its importance is realized. Observations have led me to believe that cattle tied in rows together are more frequently affected than those confined in boxes. Tuberculosis spreads more rapidly in winter, when animals are housed, than during the pasturing season.

The following table prepared by "Rockl" is of interest in this connection: Of 51,427 cattle slaughtered in 1888-89 in abattoirs and butcher-shops in Germany, the percentage of infection according to age was as

follows: 7

Up to six weeks old			0.6 %
From six weeks to one year			0.6
From one year to three years			11.4
From three years to six years			33.1
Over six years			48.4
Account not given			11.2

Such statistics, showing a very high percentage of infection in city dairies, where they are constantly housed, as against the relative freedom of young cattle, as well as the cattle on our Western plains (who lead an out-door life), point to the conclusion that atmospheric infection, as a result of prolonged and intimate contact, rather than the milk-supply from mother to calf, is the common cause.

Inhalation experiments have been repeatedly made with positive results in a large percentage of cases. Professor Arloing, Director of the Lyons Veterinary School, says: "It is no longer possible to entertain any doubt as to the daugers with which tuberculous cattle threaten their neighbors and descendants. Such animals expel the virus by the respiratory and digestive passages and by the mammary secretious. virus may infect healthy creatures when introduced into their digestive apparatus with the food or drink, or through the respiratory organs with the air." repeated experiments made by men in whom confidence can be placed have put these facts beyond all dispute; and various governments both at home and abroad have recognized this by placing tuberculosis upon their list of the contagious diseases of animals, France being the first to do this in 1887.

PREDISPOSING CAUSES.

Of the predisposing causes, hereditary predisposition is the most potent. For some reason or other, the bovine species is apparently more predisposed than any other class of animals; whether this is due to the conditions to which they are subjected, or is a natural result of the normal high temperature, is an open question.

It is observed that an animal is not at every time an equally favorable subject for the development of the bacillus, for we often observe upon post-mortem examination old points of infection where the nodule has become calcified or encysted, pointing to the belief that at time of infection the system was in such a condition as to furnish a suitable breeding-ground so that they could multiply and spread; but the tone of the system being improved by the early removal of the

⁷ Report of P. H. Bryce, M.D., to the Provincial Board of Health, Toronto, p. 25.

predisposing cause, it gradually loses these favorable properties, changes itself into a bad breeding-ground, and so sets a boundary to the further growth of the bacilli.

The effect of the present system of management of our dairy stock is to deprive them of their natural resisting power against disease. This is due largely to the fact that the price received by the farmer for milk is so low that in order to produce it at a profit he is obliged to force his animals to their extreme limit by constant breeding, abnormally prolonged lactation and over-stimulating food, which undermines the constitution and renders the tissues prone to degenerative change.

DIAGNOSIS.

The only positive means of diagnosis up to within a very short time was microscopic examination of, or inoculative experiments with the nasal, vaginal or mammary secretions, whereby the presence of the infective germ could be demonstrated, which methods could not be put into general application.

Physical examination is very difficult and unsatisfactory in a disease which may affect so many organs and tissues. The recognition of disease in the early stages is almost impossible, because in whatever organ it may be situated the changes are so slight that the functions of the organs are not seriously interfered with, and consequently no marked symptoms are de-

veloped.

There are certain anatomical difficulties in the way of making a perfect physical examination of cattle that are not met with in man. In cattle fed for milk or beef the digestive function is all-important, and the abdominal organs have been developed by nature and breeding until they encroach upon the thoracic cavity. The first stomach or rumen, with a capacity of fiftyfive gallons, distended with food, fluids or gas, presses forward against the diaphragm, crowding it into the thorax, thereby materially altering the sounds elicited upon percussion over the posterior portion of the lungs. This influence is so irregular, and at times so great, as to render the results obtained by percussion in this region of but little value. Auscultation is also interfered with, by the soft breathing of cattle, by the thick layer of interlobular connective-tissue, by the confusing sounds which originate in the rumen, as well as by the thick skin and mass of muscular tissue interposed between the ear and lung. When the tubercular lesions are located in the liver, intestines, mesenteric and mediastinal glands, it is impossible to make a positive diagnosis till after death, but, fortunately, we now have an agent by the use of which the disease can be detected in its early stages.

As a result of the researches of Dr. Koch, Professor Gutman of the Veterinary Institute of Dorpat, Russia, experimented upon cattle, and found the high reaction in tubercular animals equally constant, since which time tuberculin has been used with almost uniform satisfaction in the detection of tuberculosis in cattle. "Bollinger says tuberculin is a most valuable aid to diagnosis in the case of cattle suspected of tuber-

culosis."

Satisfactory results have been reported by the imperial sanitary office of Berlin, by the Toulouse Veterinary School and by the Copenhagen Veterinary School.

^{*} London Veterinary Journal, February, 1891.

The Belgium Minister of Agriculture issued a circular November 22, 1892, giving official sanction to test inoculation for tuberculosis.

Professor Duckerhorf says: "The results are absolute and gratifying, and show that tuberculin is a reliable agent for determining the presence of tuberculosis in cattle." 9

The conclusions arrived at by the Paris Congress of 1893 for the study of tuberculosis were, "That notwithstanding the negative results, which are happily very rare, it is an undeniable fact that the use of tuberculin constitutes by far the best means for detecting the existence of tuberculosis in the domestic s.nimals." 10

The value of tuberculin as a diagnostic agent in our own country is vouched for by the Bureau of Animal Industry; Professors Law of Cornell University; Pierson of the University of Pennsylvania; Drs. Peters, Faust and Cooper Curtis, inspectors for the New York State Board of Health; and J. J. Mc-Kenzie of the Provincial Board of Health. Regarding my own feeling in the matter, based upon the results or 163 test inoculations, I believe that in it (as the means whereby we can recognize the disease in its early stages) we have the solution of the problem whereby we cannot only prevent the spread, but very materially reduce the prevalence of the disease.

In the inoculations which I have lately made, the temperature of the animals in 118 cases was taken every two hours, from 8 A. M. to 8 P. M., after which an injection of two cubic centimetres of a ten-per-cent. solution of tuberculin was injected (in ordinary-sized animals), the temperature being again taken at 6 A. M., and once in two hours to 6 P. M.

I have observed that animals, after a marked reaction, when being tested a second time, three weeks later, did not show so high a temperature. Two cases of interest have occurred, both of which, by physical examination, would be immediately condemned as tubercular; but, much to my surprise, neither of them showed any reaction upon inoculation. Whereupon I inoculated them a second time at the expiration of three weeks, with a second negative result; but so certain was the owner that one of the animals was tubercular that he ordered her destroyed. An autopsy was made, and the diseased organs sent to Prof. William Whitney of the Harvard Medical School, who, after a thorough investigation, pronounced the organs free from tuberculosis. At the expiration of two weeks the second animal died, and was subjected to the same examination, with like result.

This, together with the fact that I have never made an autopsy where I had obtained a positive reaction by this test, where the presence of the bacillus in the diseased tissues was not demonstrated either by a microscopic examination or by inoculation into guineapigs, leads me to believe that its practical value is such that it should be taken advantage of by every owner of animals kept for the production of milk.

ITS RELATION TO THE PUBLIC HEALTH.

Dr. Brush, who is a physician and cattle-breeder, in his paper on the "Coincident Geographical Distribution of Tuberculosis and Dairy Cattle," read before the New York State Medical Society February 5, 1894, calls attention to the fact that in lands like

Journal of Comparative Medicine, October, 1892, p. 637.
 London Veterinary Journal, December, 1893, p. 411.

Egypt the indigenous inhabitants retain immunity while associating for a long period with consumptive immigrants; while, on the other hand, in regions like Australia and the Sandwich Islands, the inhabitants have become infected after the introduction of dairy cattle. The best dairy cattle breeds, he argues, are the tubercular breeds, while others not classed as dairy cattle are exempt from tuberculosis, owing to their vigor and health. Again, in all dairy countries, the prevalence of tubercular consumption is a settled fact, while the only countries at all in doubt are those where the dairy products are supplied from other sources than our domestic cows. Referring to China, he spoke of the pure Chinese as a people who did not use milk, while the Tartars in that country were meat and milk consumers; and therefore the observations of medical men are very confusing, and they confess that they cannot understand why the disease prevails among the dominant Tartar class, and not among the poorer Chinese, who, according to all preconceived notions, ought to be tubercular. The doctor then contrasts the conditions in Spain and Morocco, where the climatic conditions are about the same. "Morocco, where there are no European dairy cows, is exempt from tuberculosis; while in Spain and Portugal, where dairying is carried on in the European style, tuberculosis prevails."

The question of the infection of tuberculosis being conveyed by the milk is often of even greater importance than is infection by flesh, for the twofold reason that the former is largely consumed by infants, and is taken generally in an uncooked state; and that the cream and butter from such milk are as dangerous, if not more so, than the milk itself.

(1) All agree that the sole exciting cause of tuberculosis is the bacillus or spores.

(2) Tuberculosis prevails to an alarming extent among our dairy cattle.

(3) While it may occur in any organ or tissue of the body, some one or other of the glandular structures is almost universally involved.

(4) The tubercle bacillus is constantly present in the diseased tissue.

(5) If conveyed into the system of men or animals under suitable conditions, tuberculosis, with the characteristic tissue change, is sure to follow.

(6) Tuberculosis localized in the mammary gland is of not uncommon occurrence in cattle. Milk from such animals is found to contain the bacilli, and is capable of producing the disease.

Unlike other affections of the mammary gland, tuberculosis does not at once change the appearance and quality of the milk secreted. It is a fact that for months after the disease has appeared in the gland the milk is to all appearances normal, and may be sold and consumed without arousing the least suspicion. Authorities are, however, not fully agreed as to whether the milk from tubercular cows in which the udder is not involved should be considered dangerous; but the results of experiment have been positive in a large number of cases where no recognizable disease of the udder was manifest.

Professor Ernst and Dr. Peters report, from the result of their experiments conducted under the most exacting conditions and with every possible precaution against contamination, that the proportion of positive results in a lot of cows affected with a high degree of general tuberculosis was 80 per cent.; in a lot affected

with only a moderate degree, 66 per cent.; and a lot in which the disease was localized in the lungs, 33 per cent. The bacilli could only be demonstrated in one specimen of the milk, showing that inoculation experiments are the most certain guide as to whether the milk is infectious or not. In conclusion, Dr. Ernst

"First, and emphatically, that the milk from cows affected with tuberculosis in any part of the body may

contain the virus of the disease.

disease of the udder or not.

"Third, that there is no ground for the assertion that there must be a lesion of the udder before the milk can contain the infection of tuberculosis.

"Fourth, that, on the contrary, the bacilli of tuberculosis are present, but with no discoverable udder lesions."

In Bulletin No. 3 of the United States Bureau of Animal Industry (1893) is the report of the inoculation of guinea-pigs with milk from six tuberculous cows, where the udder was not visibly diseased, in which positive results were obtained in two cases and negative in four.

J. J. McKenzie reports 40 per cent. contained bacilli, in animals where no lesions could be found in

udder by post-mortem examination.

Some authorities, however, still contend that the udder is diseased when the milk is infected, but that the disease escapes observation. However this may be, if such is the case, the mere fact that the udder may be diseased and the disease not recognizable simply casts a suspicion upon all milk from tuberculous animals. When we consider, therefore, the prevalence of tuberculosis, and take into account the hidden character of the disease, a certain amount of suspicion rests upon all milk while these conditions exist.

While I do not for a moment contend that animal tuberculosis is the main cause of consumption in the human family, it is, however, an element of danger

that should be removed.

PROPHYLAXIS.

The remedy for such a condition of affairs can only be provided by legislation, which, to be efficient, must

be stimulated by public opinion.

It has recently been demonstrated, in the eradication of contagious pleuro-pneumonia, that half measures are of no use in dealing with contagious disease. The only hope of eradicating the disease from a herd and rendering the use of the products safe is the prompt destruction of all infected animals. The diagnosis is now made possible by the use of tuberculin, after which the premises should be thoroughly disinfected. Tubercular attendants should not be allowed to care for dairy cattle.

It is useless for us to think of stamping out the disease by separation and slaughter of the affected animals alone. Although this step must be taken, it would be simply so much money thrown away did we not go further and look to the hygienic surroundings, taking into consideration what changes were necessary in our present system of breeding and management to enable us to raise a class of animals free from this fatal predisposition and capable of withstanding the effect of the bacillus. Radical changes should be made in a large majority of the stables where animals are confined, thus providing suitable ventilation and drainage.

The periodical examination of all herds by men of technical skill, who will take advantage of the modern scientific methods and the restriction by law so that no animal should be brought into a stable until it had been submitted to the tuberculin test, except it be vouched for by the inspector of a surrounding district.

Quarantine measures are feasible against cattle coming into the State to remain (since a satisfactory examination can now be made and completed without detaining the animal over twenty-four hours). "Second, that the virus is present whether there is national government should enforce the law so that all conveyances in which animals are transported should be thoroughly disinfected after each shipment.

THE TREATMENT OF LARYNGEAL PHTHISIS.1

BY S. G. LANGMAID, M.D., BOSTON.

A PORTION of what I shall say about the especial treatment of the tuberculous throat is inseparable from the consideration of the subject of general treatment about which Drs. Sabine and Otis will speak later on.

The scope and character of the papers read to-night is clinical rather than scientific. I shall offer a similar plan in what I have to offer in my own department.

Laryngeal phthisis has been defined as "a chronic affection of the larynx attended by tumefaction and ulceration of the softer structures, and frequently by perichondritis and caries of the cartilages arising from the local deposit of tubercle which, as far as experience goes, is invariably preceded by a similar disease of the lungs."2 It may be the cause of a simple, but persistent, catarrhal affection, or it may result in serious obstructive and destructive ulcerative lesions.

Questions of pathological interest, such as the existence of tubercles in the laryngeal muscles, of the nature of the ulcerations, whether they are ever catarrhal, namely, the result of inflammation or are always due to the presence of tuberculous nodules, cannot be considered.

Nor shall we enumerate the signs by which tuberculous ulceration can be distinguished from syphilitic, lupoid or so-called catarrhal lesions. However important such signs are for the laryngologist, they can be of no real importance to the general practitioner.

The fact is that a large number of cases of tuberculosis of the lungs are complicated by disease of the larynx which we now know is tuberculous. The suffering caused by the laryngeal lesions is frequently so great as to render all general treatment of the disease quite abortive. It will not be unimportant, then, to rehearse briefly the gross pathological changes to which tuberculosis gives rise in the larynx, and to state what treatment is found efficacious in relieving suffering and prolonging the life of the patient.

The symptoms of laryngeal phthisis are aphonia, dysphonia, dysphagia, stridulous breathing, dyspnæa and cough. There have been few cases of laryngeal phthisis recorded in which it existed without previous

or coincident disease of the lungs.

It has always seemed strange to me that, as laryngeal phthisis so often coexists with tuberculosis of the lungs, it should not oftener be an isolated disease. Although I may say that I have never seen it in the larynx when either the rational or physical signs did not point to disease of the lungs, yet I have had my attention

Read before the Norfolk District Medical Society, March 27, 1894.
 Mackenzie.



attracted to the chest in a few cases by the pretuberculous laryngeal anæmia with or without swelling | healed by it. in certain elective regions.

A persistent laryngeal catarrh in patients predis-

posed to tuberculosis always excites my fears.

I have spoken of anæmia of the larynx. This is, perhaps, as common as any of the early symptoms. Infiltration of the ary-epiglottic folds is also an early symptom, as is infiltration of the inter-arytenoid fold. Later on, this infiltration may put on a coxcomb appearance, caused by granulations covering an ulcer. Aphonia may arise from the mechanical effects of this infiltration or from a paresis of the vocal muscles or from both causes.

As the disease progresses the vocal cords and ventricular bands may become thickened and ulcerated. The epiglottis does not long escape, and the amount of disease varies from one or more small ulcerative spots on the laryngeal surface of the epiglottis to an enormously cedematous enlargement with extensive ulceration.

A common laryngoscopic picture is an ulcerated epiglottis, swollen, club-shaped arytenoids, thickened and ulcerated vocal cords and ventricular bands. The glottis is narrowed by loss of movement of the cords and by the swelling of the vestibule of the larynx.

Later on the cartilaginous structures may become involved. As a rule, they generally do, and a more or less extensive perichondritis results.

The larvnx is bathed by adhesive mucus which frequently causes cough through efforts to dislodge it.

The dysphagia of phthisis laryngis is very terrible. Nothing but laryngeal cancer causes anything like the painful dysphagia.

The disease of the larynx progresses in proportion as the disease of the lungs does, but sometimes the laryngeal disease stops at a non-ulcerative stage, and the swelling of the epiglottis and arytenoids with paresis and thickening of the vocal cords alone remains for months or years.

The object of treatment of the tuberculous larynx is to relieve pain and modify or cure the disease and so to prolong life.

Formerly, almost nothing was done to relieve the distress of the laryngeal phthisis. Now, in the crowded hospital clinics these poor doomed and suffering patients receive more than usual attention out of pity for their torments.

The means used in the treatment of the larvnx consists in the local application of medicines, palliatives and escharotics; surgical procedures, such as curetting ulcers, draining cedematous swellings by puncture and tracheotomy. The use of electrolysis has also its ad-

The list of emollients and escharotics which have been used is a long one. I shall refer to some of these only which have retained their popularity after years of trial.

Lactic acid stands, perhaps, at the head of the list of local remedies. It is an escharotic, and it is claimed that it attacks only ulcerated surfaces. However this may be, it has certainly retained the confidence of those who have had the largest experience in treating laryngeal tuberculosis. It is used either with or without previous curetting. The application of the acid by simply brushing over the ulcers is not enough. It should be well rubbed in by means of a hard cotton action will take place in the larynx, but I also believe pledget upon the end of a bent wire after the applica- that the benefit which might be expected to result from

tion of cocaine. In suitable cases, I have seen ulcers

Menthol is of great value when used in a twentyper-cent. solution in olive oil. Its analgesic effects are of great service. It is not caustic. It seems to prevent and remove infiltration.

Iodoform in the form of powder or by solution in ether is sometimes very efficacious in relieving pain.

Resorcin, in eighty-per-cent. solution has its warm advocates. It certainly seems to diminish suppuration, and it can be safely used without the laryngoscopic

Some years ago morphia in glycerine was thought to be most useful in relieving dysphagia. I can only say that I resort to its use as seldom as possible.

Of the astringents, I prefer the aceto-tartrate of aluminium which in addition to its astringent properties has remarkable antiseptic power.

The use of cocaine has been advocated as a remedy in excessive dysphagia. I have found that it soon loses its analgesic power, and I have thought that it produced insomnia.

With regard to surgical procedures, I would say that remarkable cures have been effected by very vigorous curetting. When the ædema of the epiglottis and arytenoids is excessive I frequently puncture, and I feel sure that in quite a number of cases I have relieved dyspnœa.

Tracheotomy has been done to relieve dyspnæa and to rest the larynx.

You see how various the methods and remedies are, and the fact that cures by each are reported would tend to show that topical treatment should be employed in every case of ulceration.

The treatment by caustics must be left to the skilled laryngologist, but if for any reason the assistance of such cannot be obtained, great comfort may be given the patient and his life may be prolonged by a harmless course of treatment which can be carried on by the sufferer and his physician. This treatment consists in the frequent cleansing of the lower pharynx and top of the larynx by an alkaline spray, thoroughly applied several times a day and followed by the application of menthol in oil as mentioned above. The programme may be varied by substituting from time to time the eighty-per-cent resorcin or an astringent such as the aceto-tartrate of aluminium or iodoform in powder. The result of such treatment is some relief from cough and dyspnœa, perhaps healing of ulceration and diminution of swelling. The patient's comfort is secured because one great source of irritation is lessened or

A few words with respect to the effect of climate upon laryngeal phthisis. There seems to be a feeling among those who have much to do with tuberculous patients that the existence of laryngeal disease is a contraindication to sending patients to Colorado or to high altitudes.

Dr. Solly wisely remarks that "tuberculous laryngi-But," he says, tis does well literally nowhere. "cases which have resisted treatment in the East sometimes yield remarkably in Colorado, ulcers healing. But when, and this we can easily believe, tubercles exist, they may break out again."

If the progress of disease of the lungs is delayed or arrested by residence anywhere, I believe beneficial such a residence may not occur because the disease of the larynx has progressed so far that it wears out the strength of the patient and prevents proper feeding.

I am inclined to think that whatever improves the general condition, improves the larynx, or, in other words, that if the case is in other respects one for residence in moderately high altitudes, the laryngeal symptoms may not be considered, except that local treatment must be carried out wherever the patient goes.

I have known laryngeal symptoms to improve in the forest at an altitude of eighteen hundred to two thousand feet.

I have made a plea for local treatment of phthisis laryngis. I would not be understood as asserting that many cases can be cured, in fact, very few are cured; but that is not an argument in favor of neglect to attempt to give comfort to the patient and assistance to general treatment, for no matter what general treatment is given if the diseased larynx is not treated the patient will fail rapidly on account of persistent pain and dysphagia.

I state as a matter of not infrequent personal observation that many phthisical patients die, not from the effects of the disease in the lungs, but from exhaustion caused by pain and starvation dependent upon an ulcerated larynx. In many a case, although necessarily fatal, the end could be long deferred and approached with bearable amount and kind of suffering were it not for the agony which an ulcerated larynx produces.

Since the above was written, a pamphlet by Dr. Solly has reached me in which he reports the results of forty-five cases of laryngeal tuberculosis treated by him at Colorado Springs. This report is most interesting, and is corroborative of what I have written. The results of treatment of the forty-five cases were: "Non-ulcerated—six cured, seven greatly improved, four improved, five died, three worse; ulcerated—two cured, two greatly improved, one improved, fifteen died; total laryngeal—eight cured, nine greatly improved, five improved, twenty died, three worse."

"While I believe," he says, "that contrary to what was a common impression, namely, that high climates are injurious per se to tubercular laryngitis, they are positively beneficial, speaking as a generality, yet such results as I report could not be reached without, in the majority, especially in the ulcerated cases, careful local treatment."

HOME TREATMENT OF PHTHISIS.1

BY G. K. SABINE, M.D., BROOKLINE, MASS.

MUCH more has been said and written about the climatic than the home treatment of phthisis; and yet the latter is perhaps the more important, as by far the greater number afflicted with the disease are unable, owing to circumstances, to avail themselves of the advantages to be obtained at the various health-resorts. Probably much of the benefit derived from sending patients away from home is due, not to climate alone, but to removing them from the usual cares and worries incident to daily life, and to the much more important fact that they will follow out rules laid down for them when sent away which they would not do if at home. This is only a peculiar phase of human nature, that to appreciate a thing it must be obtained at some cost.

¹ Read before the Norfolk District Medical Society, March 27, 1894.

It seems that nowhere in the field of therapeutics has so much error in judgment been shown as in sending phthisical patients away, for climate is only one of many things to be considered.

Patients with incipient trouble are often sent away who can ill afford it, and, in consequence, are obliged to so economize as to deprive themselves of many things which are most essential to their welfare; for instance, the best of food, which is, perhaps, quite as important, if not more so, than the air they breathe. Others with advanced trouble are sent away, as we all know, when there is no possible chance of the disease being cured or even arrested. The question has often arisen in the reader's mind, whether a very large percentage of these patients would not do quite as well, and possibly better, if they remained at home, providing that the same rules governing their mode of life could be carried out. Certainly, the result of autopsies tends to show that, not only do very many cases of phthisis recover at home, but do so without any treatment whatever, and are only revealed after death from some other cause.

Be this as it may, many must of necessity recover at home; and the question is, How can they best be cared for? When a patient with incipient trouble consults a physician, what advice and directions ought he to receive? In as few words as possible, I should say: (1) Good food and an abundance of it; (2) fresh air; (3) suitable occupation. First in importance is the subject of food. This should be abundant and nutritious. One rarely sees a phthisical patient gain flesh and the local trouble increase at the same time (perhaps never), so that a gain in weight is a most favorable sign, and worth more than all others. We have here a key to the situation, so to speak; if it is possible to make the patient increase his weight, he will be pretty sure to gain in other respects. An excellent plan is to weigh patients at stated intervals, this being an important guide to the physician and an incentive to the patient to take the greatest possible amount of nourishment. The question might arise whether the gain in weight was not the result of im-. provement in the local condition, rather than the cause.

Two things are essential for a case of phthisis: the presence of bacilli, and a suitable soil for their development and growth. Certainly it is not every one who is exposed to the influence of bacilli who has tuberculosis, as we well know. It has been a well-recognized fact for a long time that patients suffering from certain wasting diseases (diabetes, for instance) are particularly susceptible to their influence; hence it is only fair to suppose that by bringing the nutrition up to a certain standard by feeding we may render the soil unfavorable to their further development. The diet should be general, and include a large proportion of milk and eggs, as patients can usually be induced to take larger quantities of these than other forms of food.

Too much cannot be said to convince the patient that he must not be in constant dread of catching cold, for it is this fear that usually keeps him from getting the requisite amount of fresh air. The moment most persons learn that they have trouble with their lungs they begin to house themselves and live in a close atmosphere.

It is still almost impossible to convince any except the more intelligent that their trouble is not due to exposure of some sort or other, so firmly rooted is the old idea of almost everything coming from cold.

As a large portion of one's time — at least one-third - is spent in bed, too much stress cannot be laid on the importance of keeping the sleeping-room well aired. The patient should sleep with the window If there is too much wind, and he is afraid of draughts, this can be obviated by putting a frame like that of a mosquito-netting covered with flanuel in the window, and allowing the air to sift through this. number of frames of varying height can be used, according to the temperature and amount of wind. The sleeping-room should have a sunny exposure, be provided with an open fireplace, and be free from upholstery, superflous furniture, or anything that will tend to make the room stuffy in warm weather. It would be a most excellent plan if patients living in the country could be induced to sleep in tents in summer, as is done in the Adirondacks.

During the day, one should be out of doors as much as possible without over-fatigue, regardless of weather. The early hours are the best. This is especially true of spring and fall in our climate, when so many days are pleasant until towards noon, when they become cloudy. Undoubtedly a certain amount of good can be accomplished by inflating the lungs by prolonged inhalations, especially if the patient is not accustomed to take tolerably violent exercise. He should be instructed to do this at stated times, otherwise it is very apt not to be done at all. Many patients, more especially women, almost never fill their lungs with air. We constantly see this in examining them. When requested to take a long breath they are simply unable to do so, owing to the fact that they have never done it. This may depend upon too tight clothing, or to the fact that their exercise is rarely anything except the most moderate.

Occupation is most essential. This is comparatively easy to provide for in the case of men, but in that of women it is a very different matter. It should be out of doors, if possible. It is much better that a young man should enjoy a healthy, long and useful life at some laborious occupation in the open air than to be confined to an office and die prematurely of phthisis. Frequently, the first thing to do is to induce a patient to change his occupation, as this may be a very important factor in causing his trouble. There are but very few conditions (and this does not apply to phthisis especially) where it is not better for one to be occupied and to have regular duties to perform. It conduces to contentment of mind and happiness, and this prevents patients from watching themselves too closely. Fortunately, consumptives are usually cheerful and hopeful.

One thing all should be cautioned against, and this applies, I think, to all stages of the disease, and especially the latter, and that is to avoid over-fatigue.

It seems hardly necessary to speak of medication, for oftentimes the less there is of this the better.

Of course, symptoms must be met as they appear. For a long time I have been accustomed, where there is any elevation of temperature, to give continued doses of quinine, and, I have fancied, with good effect. Patients almost always demand something for the cough, and it has to be given. It is important that this should be simple, and not interfere with the appetite, digestion or bowels. If it is explained that the cough is not the trouble, but only a symptom of the real disease, they will bear it with much more patience.

It has been generally the custom to give phthisical patients cod-liver oil or some one of its various preparations. This should be done with great caution, as it may easily do more harm than good by interfering with the appetite and digestion, and so preventing the proper amount of food being taken.

The importance of the care of the sputa, and of keeping the patient more or less isolated, especially at uight, is now very generally recognized by the medical profession; and it is only fair to the patient and his family that they should have a clear understanding of the matter, that the rules may be carried out intel-

ligently.

TUBERCULOSIS IN MENTAL DISEASE.1

BY WALTER CHANNING, M.D.

For at least the last fifty years, the intimate connection of phthisis and insanity has frequently been observed and commented upon. The greatest mortality among the insane was found to be due to consumption, and in any case of dementia such an outcome was

to be both dreaded and anticipated.

In 1862-63, Dr. T. S. Clouston, Superintendent of the Royal Morningside Asylum at Edinburgh, made a careful study of the two diseases. He found, in his own asylum, that from 1842 to 1863 the percentage of deaths from phthisis was 29 in the whole number dying, while from 1879 to 1889 the percentage had fallen to 13.6—the difference being chiefly explained by the vastly improved sanitary conditions of the institution and the more rational treatment, for, of course, the disease might have become less prevalent in the general community.

The fact was, however, brought out, that the mortality from tubercular disease was three times as great in the asylum as in the general community, being 1.19 per cent. in the former, and 0.40 per cent. in the latter case. It is the more striking when we reflect how much better off the insane person is, in regard to medical and general care in the asylum, than the sane individual in the same class in the general community. As far as these things are concerned, everything possible to prolong life is freely provided for him, with the result, already spoken of, of speedily lowering the mortality.

I find that in 1893, in twenty American hospitals for the insane, there were 1,729 deaths, of which 280, or 16 + per cent., were caused by tuberculosis. The total number of persons treated in these institutions during the year was 22,937.

That, in spite of everything that has so far been accomplished, the mortality should continue to be so considerable calls for serious consideration and study, to see what causes there may still be at work to perpetuate this fatal disease.

Clouston has established a form of insanity, from his researches, which he calls "phthisical insanity," wherein he clearly traces the evolution of the mental disease. It is a curious fact, that in this disease the whole mental outlook is the reverse of that of the sane individual. There is no cheerfulness or hope, but, on the contrary, extreme melancholy and despair. The subject of the disease is irritable, suspicious and hard to satisfy in many little ways. Savage says: "Phthisis in the insane is associated with certain groups of

real disease, they will bear it with much more patience. Medical Society, Brookline, March 27, 1894.

symptoms characterized by suspicion and refusal of food, on the one hand, and the masking of the phthisical symptoms on the other."

The actual number of cases coming under the head of phthisical insanity is small and difficult to determine. I simply refer to this part of the subject to emphasize my other remarks.

The first point that strikes one in seeing mental cases in which phthisis exists is the marked lowering of nutrition. There is usually a history of insufficient nourishment, loss of weight, anemia, etc. Let the vitality be lowered to a given point in a case of melancholia or terminal dementia, and tuberculosis is almost sure to follow. The soil is ready for the tubercle bacillus to surely develop, generally slowly, sometimes rapidly. Its approach is often very insidious where it comes in patients already advanced in dementia. There is such a loss of peripheral sensation that cough is largely or wholly absent, and it is not until emaciation, and perhaps flushing or night-sweating show themselves, that its existence is recognized. Suddenly the diagnosis is made, only to be followed by death within a short period, sometimes, perhaps, within a few days.

It is remarkable how long these patients may have had the disease, judging from the post-mortem findings, without showing signs of discomfort or inconvenience, which emphasizes the fact that the mental condition is a very potent factor in determining the course the disease may run. There are many cases which recover entirely. Clouston states that indications of tubercular deposit were found in from 30 to 60 per cent. of those asylum patients on whom autopsies were made, and apparently about 30 per cent. of the so-called cases of "phthisical insanity" recovered. We can imagine that if the mind had been in its normal condition of sensitive responsiveness, awake to the meaning and significance of each symptom, and hence filled with fear and apprehension, the vital depression would have been greater, and the result would have showed itself in an increased mortality. I do not here forget the spes phthisica, the strange hope and buoyancy of the consumptive, but hold that with these very mental conditions there must still be the pressure of fear and despondency at work, unconsciously acting as an important factor. The duality of the mental operations is now so generally accepted that we can have these apparently opposed forces working against each other. Furthermore, the spes phthisica comes when the disease has developed, and is a part of it.

Perhaps, to the general practitioner, the connection between tuberculosis and insanity, from an hereditary point of view, is of the most essential interest. There is plenty of evidence to show that either of these diseases in one generation may be followed by the other in the next. They are both transmissible, and substitute each other. It has been in times past a pretty definite rule that, given either of them in the parent, there was more than a slight tendency to their recurrence in the children, and the form taken would depend somewhat on environment.

If this was hygienically good, with severe mental strain, the chances might be more in favor of insanity, provided there had been insanity in the parent; that is, the point of divergence would be in that direction. If there had been phthis is in the parent, and the environment were neither good nor bad, then either disease might assert itself, with the chances in favor he had expressed.

of insanity. Or neither disease might assert itself, and the phthisis, by the law of atavism, recur in the grandchildren.

As time goes on, these laws of heredity appear to exercise a less degree of potency, leading to the suspicion that something besides heredity plays an important rôle in the development of these diseases, and it must be found in the environment which is called the "continuation of the heredity," but is, after all, a very much more comprehensible and controllable thing than so-called "heredity."

The fact to bear in mind is that both insanity and phthisis, while widely different in their pathology, are diseases of degeneration. If occurring in one generation, they both tend to recur in a succeeding one, provided the environment is one in which the moral, mental and physical conditions are depressing and devitalizing.

The reading of the foregoing papers was followed by a discussion of the general subject of Tuberculosis by Dr. F. C. Shattuck, of Boston, present by invitation of the Chairman.

Dr. Shattuck first alluded to the question of the preventability of tuberculosis, direct and indirect.

The direct means were made possible by the discovery of the bacillus of tuberculosis, and of the fact that the sputum and milk are the principal vehicles of the contagium. From these facts logical conclusions may be drawn and rational measures for prevention taken.

These measures may, however, be carried too far, as seen in the circular of the Pennsylvania Society for the Prevention of Tuberculosis, which society Dr. Shattuck has joined, but under protest that he cannot agree to all the measures prescribed. The essential thing is to take proper precautions regarding the sputum. As to the propriety of reporting cases to the Board of Health, there can be no objection to such a course, and it might be well to require that the apartments occupied by the patient should be properly disinfected after death or removal.

The indirect means of prevention were briefly noted, comprising those measures of general hygiene which will, by raising the general condition of those exposed, fortify them against the invasion of the disease.

There is abundant evidence that the bacillus is omnipresent, and the wonder is that the death-rate from pulmonary tuberculosis is as low as it is. The fact that so many escape, goes to show that there is such a thing as immunity. Tolerance and cure are varying degrees of immunity.

The fact that cure is possible is shown (1) clinically, by the numerous cases that get well and stay well; and (2) at the post-mortem table, which reveals apex cicatrices in those who have never shown the symptoms of tuberculosis.

The text-books used to state, that a recovery from tubercular peritonitis was proof of error in diagnosis; but modern surgery has demonstrated the falsity of such a statement. The speaker believed that meningeal tuberculosis may be recovered from, and even that in the acute miliary form some cases may be saved. This claim was first made by McCall Anderson, of Glasgow.

Dr. Shattuck's remarks were concluded by brief reference to recent private cases, illustrating the views he had expressed.

Reports of Societies.

AMERICAN DERMATOLOGICAL ASSOCIATION.

(Concluded from No. 2, p. 42.)

DR. FORDYCE, of New York, read a paper on ADENO-CARCINOMA OF THE SKIN STARTING IN THE SWEAT GLANDS.

There were exhibited a series of photographs and microscopic slides in illustration of the structure of the malignant growth. Although a number of pathologists had claimed a sweat-gland origin for certain varieties of skin cancer, a few only were recorded in which such a point of departure had been proven.

In the case reported the speaker said the growth had started as a proliferation of the column cells lining the sweat glands, breaking through the membrana propria, infecting the surrounding connective-tissue. The patient was a male, thirty-five years of age, from whose leg an egg-sized tumor was removed.

Demonstration was made of the intra-cellular bodies, which are looked upon by many pathologists as the cause of cancer. The speaker expressed his belief in the parasitic nature of cancer. The etiology has not yet been made clear.

Dr. Stelwagon, of Philadelphia, reported a long array of cases from literature in proof of the

CONTAGIOUSNESS OF MOLLUSCUM CONTAGIOSUM,

which was the subject of his paper, and which he defended with many convincing examples of the spread of the disease in hospital, institution and family. He also quoted instances in which physicians had become accidentally inoculated in operating upon patients, and referred to successful intentional inoculations. He was inclined to regard the mollusc corpuscle as the medium of contagion.

DR. FORDYCE showed photographs of these bodies within, and one just escaping from, an epithelial cell.

DR. HARTZELL did not regard them as animal cells of parasitic nature.

Dr. Zeisler had been looking for clinical evidence of contagion for years, but had never seen a case which was for him convincing. He had, however, long given up the term "non-contagiosum."

DR. WHITE said proof was necessary that the bodies were of animal parasitic nature.

DR. DUHRING said the clinical evidence of contagion must be accepted.

DR. HYDE said almost all reports came from institutions, and that dermatologists saw comparatively few cases in private. He had never seen transmission from one individual to another.

DR. ALLEN referred to accidental inoculation in his own person mentioned by the reader. The clinical diagnosis was confirmed by a colleague, and he had taken the precaution to remove the small tumors in the presence of medical men. The microscope showed molluscum corpuscles and the appearances usually found. The reason the cases showing only small tumors, observed by Dr. Duhring, did not seem to transmit the disease was because auto-inoculation as well as transmission to others was much more frequent when one or more lesions had softened, and even suppurated in nature's effort to cure.

DR. FORDYCE said that while protozoa as a cause

nation for cancer was, and that Neiser had never receded from his views concerning their relationship to

Dr. Sherwell, of Brooklyn, then read an account of a still living and indeed improving example of the type of congenital ichthyosis known as

HARLEQUIN FETUS.

The child was six months old, and he expected it to grow up. The whole surface at birth had been covered with horn-like scales from one-sixteenth to oneeighth of an inch in thickness. It was a congenital condition of non-development, but there was no other imperfection present.

Dr. Zeisler said a permanent cure was not to be looked for, but persistent oiling keeps the skin in splendid condition.

Dr. HARTZELL, of Philadelphia, read the next paper on

THE PROTOZOA-LIKE BODIES OF HERPES ZOSTER.

These were considered in their bearing upon the question of psorospermosis. Certain bodies which closely resembled protozoa were always found in the zoster vesicles examined by the writer at a certain stage. Pfeiffer first accurately described these bodies a few years ago, and Weigert found them in variola pustules. They had previously escaped observation in

They increase rapidly as the evolution of the vesicle progresses. There are three varieties: round or oval cells; larger ones, having two or three times the diameter of epithelial cells; and pear-shaped bodies with a wide border surrounding an internal capsule enclosing a cavity containing a number of rounded cells. These resemble strikingly the epithelial cells containing coccidia found in rabbits' bile-ducts. The author had found the same bodies in a case of recurrent zoster over the course of the sciatic, in which all clinical features pointed to a traumatic origin; and therefore the writer thinks the possibility of infection is excluded.

We can therefore conclude with certainty that we have to do with altered epithelium, not with protozoa. It is fair to presume, too, that so-called psorospermosis in other diseases are metamorphosed epithelial cells. Active movement observed in these cells argues against hyaline change. The process which produces their enormous growth and peculiar arrangement is certainly one of vital activity and not of degeneration.

Dr. J. C. White, of Boston, then read a paper on

RARE DERMATOSES,

which included his experiences with and views upon such interesting conditions as pityriasis rubra pilaris (Besnier), erythème induré des scrofuleux, lymphangioma circumscriptum, multiple benigu cystic epitheliomata, and augioma serpiginosum (Crocker).

The first disease was a member of the group of keratoses requiring our special attention. It is less rare than our statistics would indicate.

The peculiar erythema resembling that of the nodose variety but which subsequently softened and suppurated like a gumma was next discussed. Antisyphilitic treatment has no good effect. There may be deeply imbedded nodules on the lower legs. Some of the larger lesions have a dusky purple color, and sorospermosis were not growing in favor, this explasione become depressed in the centre, with discolored

cicatrices. They are more deeply seated and more uniform than erythema nodosum, more sparse, not limited to the shins, are covered with normal skin, not "contusiform," become necrosed, not so tender on pressure. It resembles the so-called scrofulous gumma, but the bacilli would have to be demonstrated to make the writer believe it a tuberculosis.

The much betitled condition, "multiple benign cystic epitheliomata," was illustrated by an excellent photograph showing the lesions upon the face. There were fifty lesions, in some of which softening had begun three years ago. There were flat, skin-colored papules and tubercles, lesions with depressed centres, lesions with crusted centres and crater-like margins, and irregularly elongated ulcers, some showing the characteristic appearances of rodent ulcer. All were free from subjective manifestations, but some had taken on the features of ordinary epithelioma. Dr. Bowen's examination had shown identity with Dr. Fordyce's case. The question was asked, Have some of these lesions undergone malignant transformation, or is this to be the eventual fate of these cases, showing that in time new epithelial tissue is bound to go to the bad?

The angioma serpiginosum occurred in the person of a boy and extended as a belt three inehes in width from the right scapula forward to the region of the nipple. The lesions were from a pin's head to two or more inches in diameter, elevated from one-twelfth to an eighth of an inch, and having an annular elevated creeping margin. New foci would spring up at a little distance from the original. The progressing ring was a firm, smooth elevated structure of uniform breadth. Hutchinson had described the process in 1891 as infective angioma or nevus lupus. Crocker's term was considered more appropriate.

Dr. Councilman, of Harvard University, had examined specimens from the case and on invitation of the Society reported upon them. The points of most interest to him, he said, had been the evidences of retrogression in the growths. The growths themselves consisted essentially in masses of cells in the corium, but no alteration in the epithelial cells of the skin. The general structure of the skin had undergone no alteration. Cells not unlike granulation cells were found in inflammation tissue everywhere. The nucleus was epitheloid. In the nodules one could see larger aggregations of cells made up by still smaller nodules. At first there was a growth of endothelium and perithelium of the corium. At the same time there might have been a growth of blood-vessels.

In a number of places, indicated in a drawing which was shown, there seemed to be evidence that these masses were undergoing retrogression, and in the small masses there were very curious structures in the blood-vessels. In the spaces which were believed to be blood-vessels there were small masses which appeared to be somewhat like amœba, or forms of lower organisms; but it was concluded that they were not such. Dr. Bowen examined the specimens with Dr. White, and the name which they decided upon as fitting the condition was angeio-sarcoma. It does not correspond to the ordinary type of angeio-sarcoma because in pathology this applies to a tumor originating from a blood-vessel. Still this evidently was a sarcome and was certainly not an inflammatory condition but one often found about blood-vessels. The growth as presented was very rare.

Dr. Allen, of New York, read the next paper on a QUININE EXANTHEM,

showing itself only upon certain well-defined areas, each time the drug was administered even in the most minute dose. The spots were always erythematous at first, symmetrically distributed on upper and lower extremities, between the shoulder blades, and invariably upon the glans penis and prepuce. If five grains were taken bullæ vesicles and denuded patches would follow at the site of early redness. The eruption was produced experimentally a number of times with various preparations, ranging from the tannate to the carbamide, by mouth and hypodermatically, showing that the base and not the acid is the offending agent. It was also shown that no local effect could be produced, though alcoholic solutions and ointments applied to the skin were invariably followed by pruritus and erythema in distant parts. A symptom present several times was a heavy dragging feeling between the shoulders and examination showed tenderness on pressure over a dorsal vertebra which disappeared with the other symptoms due to the drug. From this the argument was drawn that that the cord was primarily affected by the quinine and that the angelo-paralysis in these symmetrical locations was a reflex nerve condition and not due to elimination of the drug by the skin nor to any effect on the skin nerves. If this was found on future investigation to be a tenable position it might help explain some little understood dermatoses and might also explain the way in which quinine acts therapeutically to produce some of its peculiar effects.

Dr. Bronson, of New York, then read a paper on

A CASE OF SYMMETRICAL CUTANEOUS ATROPHY OF THE EXTREMITIES.

The rare condition described affected a man of forty-five, a varnisher of brass and iron, and first appeared fourteen years ago upon the left ankle, and in course of time upon various other regions. There was thinning of the skin permitting the blue veins to show through. These spots were sensitive. It was spontaneous and idiopathic. From the hips down and the lower two-thirds of the arms are the parts now affected, the trunk being normal. The skin of these parts is in wrinkles, and everywhere the tortuous veins show through. The whiteness of the normal skin has disappeared. A lilac hue is here and there noticeable. The wrinkling is most pronounced about Hairy growth has the knees, thighs and buttocks. almost disappeared and sweating seems to have ceased in these parts. The skin has the feel of dry parchment. The appearance is much that of superficial cicatrix. The clinical type to which this case most clearly corresponds is that described by Buchwald and the atrophy might well be named after this observer. The etiology is obscure. The adipose layer seems to have disappeared and a general atrophy of all the skin elements to have taken place. No treatment was suggested.

DR. ZEISLER, of Chicago, spoke upon

THE RELATION OF IMPETIGO HERPETIFORMIS TO PEMPHIGUS VEGETANS.

One who has studied the literature of the subject and observed the two diseases with the picture of Kaposi and Neumann before him, must have been struck by the features which are common to both, and

which make the differences all the more difficult to the dermatologist. The tendency seems to be to include so few cases under impetigo herpetiformis that there is danger of its being done away with. Formerly it occurred mostly in women. This is true of pemphigus vegetans also. The inception is mostly on the mucous membranes. In the speaker's own case there was a peculiar roughness and herpetic coudition of the lips.

In impetigo herpetiformis Kaposi's postulate is in the main true, but a little liberality ought to be allowed for deviations from the type. In his own case large bullæ appeared during the last four weeks, but up to this time he had been in doubt. Peripheral extension, too, is common to both diseases, with central desificcation. Papular vegetations are not characteristic of either disease exclusively, but are to be rej garded as the expression of a cachectic condition; and the same thing may be observed in syphilis and in burns where cachexia is present. Auspitz selected the name from the vegetations observed in his own case. In the speaker's case vegetations had not been present from the start. They come where moisture, friction and warmth are effective, and their importance as conceous pemphigus vegetans falls to the ground. In both diseases vegetations may be noted in certain regions from the very beginning. In one disease the miliary character is more pronounced, in the other the pemphigoid. In order that the diagnosis may be positive the case should be followed from beginning to end. A strong protest was entered against throwing out a case because it does not agree in every minute detail with the early descriptions for diseases in which only ten of the one and thirteen of the other have been recorded; a clear, decisive picture of undeviating type is scarcely to be expected.

In the discussion several speakers agreed, and favored the view expressed.

Dr. Bronson showed a new dermal curette and comedo expresser.

Dr. Duhring presented photographs sent by Dr. Breakey, of Ann Arbor, illustrating a case of sarcoms of the skin, but which bore great resemblance to granuloma fungoides.

Dr. Duhring also submitted portions of skin; and by invitation, Dr. GILCHRIST, of the Johns Hopkins, read a report on their examination, which showed the disease to be one of

PROTOZOA DERMATITIS

such as had not before been encountered in this country. The microscope showed proliferation of epithelium and prolongations downward, miliary abscesses with pathological changes deep down into the subcutaneous tissues. There were so-called cancer parasites in the epidermis. The protozoa were particularly frequent, 60 being seen in the field under low power, there were large giant cells with as many as 160 nuclei to a cell. Twenty protozoa could be found in one giant cell.

The only case in literature like it was reported from Buenos Ayres. The bodies measured up to 30 millimetres. The adult showed a clear outerspace and granular protoplasm in the interior.

A dog was inoculated and the same disease was reproduced, protozoa being found a month later.

The reader thought the bodies belonged more to plant than to animal life.

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AN INDICTMENT OF ASYLUM SUPERINTEN-

THE July number of the Journal of Nervous and Mental Disease contains the address delivered by Dr. Weir Mitchell before the American Medico-Psychological Association at their fiftieth annual meeting in Philadelphia last May, to which reference has already been made in these columns. The Association invited the freest and frankest criticism. They got more than that; they got a sweeping indictment of American asylum superintendents and American asylums and their methods.

First of all, Dr. Mitchell criticizes the character of the average board of managers. He has, of course, nothing but the bitterest condemnation for the custom, which is only too common, of regarding official positions on such boards and in the asylums themselves as part of the spoils to be used by a political party; but even where politics do not enter into the question the boards are only too often wooden; the best of them are made up of "very excellent, kindly, middleaged clergymen, merchants, lawyers and the like," who are bound down by routine and tradition, who make valueless inspections, who "do not know their business, and do not know that they do not know."

Turning to the superintendents themselves, Dr. Mitchell tells them frankly that he does not believe that they "are so working these hospitals as to keep treatment or scientific product on the front line of medical advance. Are you really doing all that might be done without serious increase of expenditure? Where are your annual reports of scientific study, of the psychology and pathology of your patients? Where are your replies as to the questions as to heredity, marriage, the mental disorders of races, the influence of malarial locations, of seasons, of great elevations? Even in your own line most of the text-books, many of the ablest papers are not asylum products. What is the matter? You have immense opportunities, and,

seriously, we ask you experts, what have you taught us of these 91,000 insane whom you see or treat. When we ask for your asylum notes of cases we are too often surprised at the amazing lack of complete physical study of the insane, at the failure to see obvious lesions. at the want of thorough day by day study of the secretions in the newer cases, of blood-counts, temperatures, reflexes, the eye-ground, color-fields. You may be fair general practitioners in insanity, but productive neurologists of high class, regarding disease of the mind organs as but a part of your work? No - I think not." With this inertia in scientific research, treatment is too often neglected. Many superintendents still cling to the superstition that an asylum is in itself curative, that there is some mysterious therapeutic influence to be found behind walls and locked doors; but massage, electricity and hydro-therapy are seldom employed, the diet is poor and monotonous, the patients have too little occupation and employment, and the nursing force is inadequate, uneducated and unfit. "Neither States, nor boards, nor you." he says, "are ardently living up to the highest standard of intelligent duty."

Weighty as this indictment is, it would lack force were it simply the criticism of a single man, eminent as that man is. Dr. Mitchell publishes with his address letters from thirty of the leading neurologists and consultants in the country, and this jury practically endorses his indictment as a "true bill."

To the honor of the Association be it said that they invited this criticism and that they have accepted it in the spirit in which it was uttered. In their attitude lies the greatest hope for the remedy for these evils. It is but natural to plead extenuating circumstances, and to point to the good work that many of the superintendents are doing and to the distinct advance that has already been made by the Association itself. All these things, however, have been fully recognized by Dr. Mitchell. He has given full credit to the superintendents for the good work they have done, and he recognizes all the obstacles in their way - the limited means, the inertia or opposition of governing boards, and the multiplicity of duties that are thrust upon the superintendent, yet all these obstacles are among the things he condemns, and it is against these evils that he and his jury have raised their voices.

It must be admitted that many of the items in Dr. Mitchell's indictment hold good here in Massachusetts. Seldom, if ever, does a governor venture to appoint an expert in neurology and psychiatry on the State Board of Lunacy and Charity or the boards of asylum trustees. The overseers of the poor are ever eager to cut down the rates of board in the asylums, and the legislatures are only too stingy with their appropriations. The inspector of charities would not venture to make provision for a suitable pathological laboratory at Medfield, for fear that the item would be stricken out, and the trustees of Taunton hardly dare hope for a pitiful \$2,500 for a simple mortuary and autopsy-room burden of administrative work is light, and whose duties are less onerous than those of the city practitioner, can only with difficulty be induced to undertake clinical research and to present papers at the various society meetings.

We recall a large State asylum, containing several hundred insane, near a small city. The printed blanks on which the case records are kept contain headings which demand, when filled out, that a most thorough examination has been made of every patient by the most careful methods of clinical research, and an examination of the blanks in use and the reports of published cases prove that this has been done. In connection with the administration building is a large reading-room containing files of all the leading neurological journals in the world; close by is an examining room with apparatus for testing the reaction time, and for other elaborate methods of psychological research; in the pathological laboratory, almost as large as that of the Harvard Medical School, not only are careful examinations made of the central nervous system in the cases that come to autopsy, but experimental research is carried on upon animals with reference to various problems of neurological interest, and one or two young men are constantly at work there; from time to time the assistants publish careful studies of the effect of certain new methods of treatment or excellent clinical studies of their cases, and aid in editing a journal of psychiatry; in one of the buildings is an elaborate system of baths, where hydro-therapy in all its forms can be employed; the whole asylum is a centre for scientific research, and there are many other asylums like it in the State. Are our State asylums doing any such work? Neither in men nor in money would the Commonwealth of Massachusetts admit inferiority, yet why, in this respect, is Massachusetts so much inferior to Italy?

The American Medico-Psychological Association, as we have said, have shown the spirit which will enable them to profit by the criticism they have received, but Dr. Mitchell's indictment extends beyond them to the whole medical profession. It is the duty of the profession to support the superintendents in the reforms which they will undertake; to urge upon the governor that upon every board that has to do with the insane there shall be men who are experts in neurology and psychiatry; to teach the overseers of the poor and the legislators that an asylum is not a house of detention where the insane are to be boarded as cheaply as possible, but a hospital, demanding modern apparatus for scientific research and medical treatment as much as any other hospital. Our cities are more than liberal in the support of general hospitals, why should not the State be as liberal in the support of its insane hospitals? The profession, too, must demand that only men who have proved their ability should be appointed to asylum positions, and that they should receive proper pay. Finally, they must say to there. Even the asylum assistants, on whom the the superintendents, "We do not want to hear about

bath-tubs or the price of coal; what we want to know is what are you doing for the care and treatment of the insane, what are you doing to advance our knowledge of mental pathology?"

THE EIGHTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

THE approaching session of the Eighth International Congress of Hygiene and Demography brings renewed appreciation of the amount and character of the attention paid, at the present time, to questions of hygienic and prophylactic medicine, and its work is a just measure of the permanent ground gained by scientific civilization.

Medicine at first attempted by its crude therapeutics to repair damage done; then, as it advanced to a crude and speculative pathology, it entered upon a struggle with disease to thwart it. At this period its stronghold was a heavily stocked armamentarium of drugs. Under the first great advances of modern chemical, microscopical and bacteriological knowledge the battle-field has become that of prophylaxis; and it is here that the greatest victories have been won and will continue to be won.

The wide extent of this work is amazing even to the student of medicine, who might suppose that a Congress of Hygiene would be a small affair. The preliminary announcement of the Buda Pesth Congress, however, should dispel any such idea. The work of the Congress will be carried on in many sections, the hygienic division having nineteen, and the demographic They are as follows: Hygiene — (1) Etiology of Infectious Diseases, (2) The Prophylaxis of Epidemics, (3) The Hygiene of the Tropics, (4) The Hygiene of Trades and Agriculture, (5) Hygiene of Children, (6) Hygiene of Schools, (7) Articles of Food, (8) Hygiene of Towns, (9) Public Buildings, (10) Dwellings, (11) The Hygiene of Communi cations, Railroads and Navigations, (12) Military Hygiene, (13) Saving of Life, (14) State Hygiene, (15) Hygiene of Sport, (16) Hygiene of Baths, (17) Veterinary, (18) Pharmacology, (19) General Samaritan Affairs. Demography - (1) Historical Demography, (2) General Demography and Anthropometry, (3) The Technic of Demography, (4) The Demography of the Agricultural Classes, (5) Industrial Laborers, (6) The Demography of Towns, (7) Statistics of Bodily and Mental Defects.

The Executive Committee have selected for each section the main questions the discussion of which seems most important, and have secured adequate discussion by invitation to special scientists, which have all been accepted. Already more than five hundred and thirty papers have been received for reading, and two hundred and thirty official delegates have been announced. The arrangements thus far made indicate a well-ordered Congress, without delays or confusion, and sessions in which the discussion will be direct, brief and able. The social aspect promises well.

MEDICAL NOTES.

THE PLAGUE. — The plague at Hong Kong is becoming less prevalent, though still of an exceedingly fatal character. Several physicians have been taken ill, and one has already died. There have already been some two thousand deaths.

THE CHOLERA. — The cholera is now most severely epidemic in St. Petersburg, and is reported as being of a more intense and fatal character than in the past two years. All the hospitals are now full, and the new cases number several hundred each week. In the Warsaw districts and in the provinces the disease is still prevalent, but has as yet not increased to any extent. The outbreak in Belgium has not spread, and is lessening somewhat. The disease is now reported epidemic in Canton, China, where it is said several thousand deaths have already occurred.

DR. JOHN WILLIAMS MADE A BARONET. — Dr. John Williams, who attended the Duchess of York during her confluement, has been made a baronet.

MR. GLADSTONE'S EYESIGHT. — Mr. Gladstone is reported as making continued progress in the recovery from the recent operation on his eye, and will soon be about again.

PROFESSOR OF PATHOLOGY IN THE UNIVERSITY OF GLASGOW. — Dr. Joseph Coats has been appointed professor of pathology in the University of Glasgow, the appointment to date from October 1, 1894.

DOCTOR OF MEDICINE "HONORIS CAUSA." — The University of Moscow has made Dr. Roth, the Vice-President of the Moscow Society of Neuropathology and Psychiatry, a doctor of Medicine "honoris causa." Dr. Roth is a privat-docent in the University.

A PHYSICIAN IN THE CABINET OF COSTA RICA. — Dr. Juan J. Ulloa, of San José, who was the official delegate of the Republic of Costa Rica to the Pan-American Medical Congress in Washington, has been appointed Secretary of the Interior and of Public Improvements by the President of Costa Rica.

BOSTON THE CITY OF PARKS. — In an editorial upon the Boston park system Architecture and Building says: "The idea that a city needs 'lungs' where its inhabitants may breathe fresh air, where its children may play, has been a growing conviction with Bostonians, and is bringing about a condition of things in and about their city which will rename it the 'City of Parks.'"

THE AMERICAN CHEMICAL SOCIETY. — The American Chemical Society will hold its annual meeting in Brooklyn, N. Y., during the session of the American Association for the Advancement of Science, in August. Prof. H. W. Wiley, of the Department of Agriculture, will preside.

SHORTHAND IN MEDICINE. — In order to promote the use of shorthand by medical students and practitioners, by enabling them to increase their knowledge at the same time of the art and of their profession, a

small sheet of clinical teaching in lithographed phonetic shorthand has been issued by a London firm. The paper, which will be continued if found to fill a need, contains reports of clinical lectures by Dr. Gowers, and other prominent London clinicians.

ADVANCED CEREBRAL LOCALIZATION. — A Philadelphia physician has made so thorough a study of brain topography that he makes the following definite statement: "The corpus callosum is the seat of the soul, the imperishable mind, and is the great reservoir and storehouse of electricity, which is abstracted from the blood in the arteries and conveyed through the nerves up the spinal cord to the corpus callosum." Inasmuch as formerly the mind resided in the sella turcica, it must be that like the sun, the soul "do move."

"DE BES' FOOD FOR BABIES AND PUPPIES."—
The following conversation occurred between a Georgia physician and an old negro nurse who objected to the dietary prescribed for the baby under her care: "Been nursing long, Auntie?"—"Yes, sir, nussin' young miss dare and ole miss and all ole missus chillun since afore freedom."—"Is pot-liquor and corn bread good for babies?"—"Corn bread and pot-liquor is de bes' in de world for babies an' puppies, yes, sir."—"Always fed your own babies on it?"—"Yes, sir."—"How many babies have you had, Auntie?"—"Thirteen, sir."—"How many alive now?"—"One, bless de Lawd."

THE ANCIENT USE OF STERILIZED WATER. - A correspondent sends to the Dietetic and Hygienic Gazette the following interesting quotation from a recent book on Media, Babylon and Persia, by Ragozin: "As soon as Susa became the principal capital of the Persian Empire, its river, the Choaspes, had the honor of supplying the kings with the only drinking-water they would use. Kyros first instituted this custom, which was religiously kept up by his successors. 'Whenever the great king travels,' Herodotus reports, 'he is attended by a number of four-wheeled cars drawn by mules, in which the Choaspes water, ready boiled for use, and stored in flagons of silver, is moved with him from place to place. It is amusing to find so early an instance of this hygienic precaution - the boiling of water - which we are wont to consider so very modern."

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the week ending at noon, July 18, 1894, there were reported to the Board of Health of Boston, the following numbers of cases of acute infectious disease: diphtheria 34, scarlet fever 32, measles 2, typhoid fever 5.

THE ANNUAL REPORT OF THE ADAMS NERVINE ASYLUM. — The annual report of the Adams Nervine Asylum shows that 101 persons received treatment during the year just ended. The average stay of the patients was 4.55 months. Sixteen patients were

discharged as recovered after an average stay of 4.68 months; 38 as relieved after a stay of 5.20 months and 19 as not relieved after an average stay of 3.17 months. There were no deaths. The average weekly expense for each patient was \$27.92. The income received from the patients was a little over thirty per cent. of the expenses. There are at present 28 patients in the hospital.

A LEGACY TO ST. JOHN'S HOSPITAL, LOWELL.— St. John's Hospital, Lowell, which was one of the residuary legatees of Patrick Moran, who died several years ago, has, by the recent death of Mrs. Moran, come into possession of \$25,000, its share of the estate.

THE BURBANK HOSPITAL AT FITCHBURG, MASS. - The new Burbank Hospital at Fitchburg, was opened for the reception of patients on July 16th. It has at present accommodations for over twenty patients, and some rooms are still incomplete. The building is heated by hot-water methods, and is lighted by both gas and electricity. The operating-room is especially well arranged and equipped. separate building for contagious cases and another for the nurses' home. The matron and head nurse are graduates of the Waltham Training School. The visiting staff consists of Drs. F. H. Thompson, C. H. Rice. E. P. Miller, H. H. Lyons, J. W. Stimson and C. W. Spring. Drs. George Jewett and G. D. Colony, with Dr. M. H. Richardson of Boston, compose the consulting staff.

NEW YORK.

VITAL STATISTICS. — According to the returns just made by Dr. John T. Nagle, Registrar of Vital Statistics, there were recorded during the first six months of 1894, 21,655 deaths in the city, as against 23,734 for the corresponding period last year, when the population was estimated to be about 65,000 smaller than at present. This represents an annual death rate of 25.10 per thousand of the population for the first six months of 1893, and of 22.02 for the first six mouths of 1894. In the first half of 1893, 23,451 births were reported, while in the first half of 1894, 28,196 were reported. The recent report by Sanitary Superintendent Roberts on the tenement-house census, shows the general sanitary condition of the city to be very good.

Tuberculous Cows. — The attempt was recently made to smuggle into the city and butcher two cows in an advanced stage of tuberculosis, but fortunately the meat inspectors discovered the matter in time. Both animals were promptly killed, and the autopsy showed not only that the lungs were filled with tuberculous deposits, but that the liver, intestines and other abdominal viscera were frightfully diseased. It was found that one of the cows came from Brewster, on the Harlem Railroad, and the other from Orange County, and that the milk from one of them had been sent regularly to the city. Sanitary superintendent reported the cases to the State Commissioner on Tuberculosis for investigation.

MORTALITY. - During the week ending July 7th, there were reported 979 deaths, as against 971 for the preceding week. This is an increase of 62 over the corresponding week of 1893, but is 57 below the average of the first week in July during the past five years, although the population has been increasing at the rate of about 65,000 a year. It represents an annual deathrate of 26.08 per thousand of the estimated population, and it is .92 below the average of the corresponding weeks of the past five years. The greatest mortality of the week was naturally due to diarrheeal diseases, which carried off 240 persons, 227 of whom were children under five years of age. Diphtheria still continues to be the most prevalent and fatal of the contagious diseases, and during the week there were reported 232 cases, with 61 deaths. There were 9 cases of small-pox, with 4 deaths.

Miscellanp.

THE NEGRO AS A HOSPITAL INTERNE.

In the last examinations for position as interne at the Indianapolis City Hospital, a negro was appointed as the best fitted among a considerable number of candidates. The young man is of Massachusetts birth and is twenty-one years old. He is a graduate in arts of the State University of Missouri, and received the degree of M.D. from the Medical College of Indiana in this year's class, ranking third in a class of fifty-four, all the others being white.

This appointment of a negro, though fairly won, has caused a most bitter outpouring of abuse upon the young man and all concerned in his appointment. His services began in the surgical wards, whereupon the pay patients left and the charity patients made bitter complaint at what they considered an indignity. The general character of the vituperation can be judged by the following extracts from a letter to one of the local medical papers. After bewailing the fact that during this young man's service — which the writer will only speak of as "these circumstances," — no pay-patients will enter the hospital, and thereby the city will lose some two to five hundred dollars a month, the letter continues:

"The worst feature of this unfortunate situation is that in four months, by rotation, this young man will be placed in charge of the obstetrical department, and white women, whose only crime is poverty, must submit to the unspeakable outrage of bringing innocent children into the world under the touch and manipulation of this son of Ham."

He then asks

"the Board of Health, who made this appointment, the cringing politicians who prevent the righting of the wrong, and, lastly, all persons who favor this phase of negro equality: How would you like to look back to the day of your birth and know that a negro doctor helped to usher you into the world?"

In conclusion he says:

"If the Indianapolis city government does not place this young man where he will only administer to those of his own race, as is fit and proper, they will rob the city treasury, degrade and humiliate many persons, benefit no one and deserve everlasting contempt from every citizen, both white and black."

In publishing the letter from which the above quotations are made, the editor appended this note as a much-needed rebuke to the writer:

"Prejudice, custom and habit are all stubborn things. The writer of the above article is shaved by a colored barber, attended by a colored waiter, is often bathed by a colored attendant, eats food from a colored cook, and we have seen him driving with a colored coachman by his side. All the most intimate personal services are performed for most of us at times by colored barbers, waiters, attendants, nurses, etc., and we take it as a matter of course; but prejudice cries out against a colored doctor, who undoubtedly possesses more intellect and learning than the average white man of similar training and who very likely possesses a more sympathetic heart and more gentle touch and manner by reason of his race and nature than the average white man."

THE HOLY WELL AT MECCA.

MR. E. H. HANKIN reports ¹ the following interesting analysis of a sample of water from Hagar's Well at Mecca. The water had been brought from Mecca by a hadji of repute, and was contained in a vessel of tin hermetically sealed:

"The vessel was shaped like a watch, and held about 200 c. c. of water. Owing to the small quantity of the water at my disposal, the analysis was only carried out with difficulty, and the results are no doubt somewhat inaccurate. They are as follows:

"The figures for ammonia are no doubt without value, owing to the very good reason that at least eight months elapsed between the collection of the sample and its coming into my possession. The amount of chlorides is not necessarily an indication of pollution, as it would generally be regarded in England. In India, at all events, chlorides in well water are, I believe, more often an indication of the presence of saline matter in the soil than of contamination with organic matter. The quantity of total solids is, however, far greater than I have ever found in any well water reputed to be fit for petable purposes.

"It is a universal custom for the pilgrims to bring away with them these tin vessels, or dibias, of Zem-Zem water. Rich pilgrims may bring away one or two hundred of these dibias to distribute to their friends on their return to their native country. Poor pilgrims are, however, content with one or two. The Zem-Zem water is put into the dibias by the Mecca traders during the time of the year when no, or few, pilgrims are present; and it is very probable that the Zem-Zem water is often diluted, as this does not diminish its sanctity, and the supply of water in the well is by no means equal to the demand."

"HAIL HORRORS!"

MACBETH "supped full with horrors." But could he return and live in modern times, he might have even a richer banquet than his first; for a Frenchman, M. Gelineau, has just published a volume upon "Unhealthy Fears, or Phobiæ." These curious and uncomfortable states of mind were first described by

¹ British Medical Journal, June 30, 1894.

Benedict and Westphall; but there are many species, and M. Gelineau has carefully compiled a complete list for the benefit of his shuddering and yet fearbound reader.

They are, aichmophobia, or fear of sharp points, as of needles or pins; agoraphobia, or fear of open spaces, with a sub-variety, thalassophobia, or dread of the ocean; astrophobia, or fear of the stars and celestial space; claustrophobia, or fear of enclosed spaces; mysophobia, or fear of filth; hematophobia, dread of blood; necrophobia, or horror of dead bodies; thanatophobia, or dread of death; anthropophobia, or fear of crowds; monophobia, a fear of being left in solitude; bacillophobia, or fear of microbes; siderodromophobia, or dread of railways; pathophobia, or fear of disease - with many subdivisions, of which the most important and most frequent are anginophobia (fear of angina pectoris), ataxophobia, syphilophobia, lyssophobia (or fear of rabies), spermatophobia and soophobia (or fear of animals), which in its turn has subdivisions for cats, dogs, horses, mice, etc., ad totum catalogum animalium.

Returning to the list, we find still kleptophobia, fear of becoming a kleptomaniac; pyrophobia, fear of matches; stasophobia, dread of standing upright; aërophobia, or dread of draughts of air; acrophobia, fear of high places; toxicophobia, a fear of poisons; demonophobia, a dread of the devil (this is rather rare).

There are also a very great number of phobiæ peculiar to certain professional persons - as physicians, artists, merchants - which have yet to be Hellenized and classified. The culminating fear, however, the quintessence of dread, is the fear of having a fear, the dread of a dread, or phobophobia.

TWELVE THOUSAND PRESCRIPTIONS.

THE anticipated formation of a new and more extensive British Pharmacopæia has led to an exceedingly interesting compilation of statistics by Mr. Martindale, F.C.S., of London.

In the constant changes which must inevitably occur in the advances made in therapeutics, many drugs and preparations become obsolete, and the art of pharmacy replaces others by improved processes.

In his pamphlet, "Analyses of Twelve Thousand Prescriptions," Mr. Martindale has endeavored to indicate the current of this change in recent years. He has carefully analyzed the last two thousand prescriptions dispensed antecedent to April 1, 1894, in six pharmacies in the following cities of the United Kingdom: Aberdeen, Bournemouth, Carlisle, Cork, Oxford and London. The statistics do not record the number of times a drug has been employed nor repetitions of prescriptions, but simply the frequency with which a drug or its preparations has occurred in the written prescriptions of physicians, surgeons and general prac-

Out of the twelve thousand prescriptions spiritus chloroformi leads the van with a record of 1,117. The second most popular article was tincture of nux vomica, which was written for 991 times. Glycerine had 875 calls, standing third on the list. Next in order came bicarbonate of soda, 807; syrupus aurantii, 796; spiritus ammonii aromaticus, 675; quininæ sulphas, 598; vinum ipecacuanhæ, 504; potassii bicarbonas, 463; and aqua chloroformi, 437. There were 1 Centralblatt für die gerammte Therapie, May, 1894.

but ninety-nine preparations called for more than a hundred times, showing a fairly wide range of therapeutic choice.

The first preparation of opium in any form is the liquor morphinæ hydrochlorates, which stands fiftysecond in the list, with a score of 172. Tincture of opium is sixty-third, with a score of 147. The relative positions of a few other drugs are interesting. Tincture of digitalis was called for 300 times and ranks twenty-seventh. Tincture of the chloride of iron stands thirty-fourth, with 249 calls; with bismuth subnitrate next, having 247.

Of the relatively specific drugs iodide of potash had 356 calls, and stands eighteenth; salicylate of soda had 323 calls, and ranks twenty-one. Pilula hydrargyri, the first preparation of mercury, stands twenty-ninth, with 273 calls; while three below it is the subchloride, with 258 calls.

One hundred non-official preparations appear in the list, of which but four were prescribed over one hundred times, namely, syrupus ferri, quininæ et strychniniæ phosphatum, 173; syrupus hypophosphitum comp., 143; nepenthe, 107; and lotio acidi borici,

One hundred and twenty-six official preparations, other than tests and those required for making official compounds, were not once prescribed.

A similar study of prescriptions in this country would offer an interesting comparison and a basis for the formation of an international pharmacopæia.

THERAPEUTIC NOTES.

THE TREATMENT OF TYPHOID FEVER WITH LAC-TOPHENIN. - Von Jaksch 1 reports the treatment of eighteen cases of typhoid fever with lactophenin with surprisingly good results. Some of the cases had shown a continuous temperature of over 40° C. for several days with great dulling of the intellect and marked prostration, all of which had defied other lines of treatment. Other cases had severe renal complications, or hypostatic pneumonia. It is very essential to give the lactophenin in capsules - 0.5 to 1.0 at a dose. According to the antipyretic effect noted the drug may be repeated up to six grammes a day. So far, he has not noted any ill effect whatever. In one case only was the first dose vomited — but subsequent doses were excellently well borne, and the effect upon the patient was as favorable as in the other cases. Twice during the administration of the drug a somewhat arhythmic pulse was noted for a while. The excellent effect of the drug was always a prompt reduction of the temperature which under even very moderate dosage remained for several hours, and the rise of temperature following was gradual and unaccompanied by chill. In some 360 observations there was but one case in which the rise of temperature was accompanied by slight chilli-The drug had a particularly quieting effect upon the typhoid patient. The delirium ceased and the intellect cleared to a marked degree so that the patients all expressed a sense of subjective comfort. It is a crystalline powder with a slightly bitter, not unpleasant taste, and soluble in water. A similar favorable report of its use in some forty cases of various acute febrile disease including numerous cases of typhoid, is made by Jaquet from the medical clinic at Basel.

METEOROLOGICAL RECORD.

For the week ending July 7th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:-

	Baro- meter		ermeter			Relative Direction of wind.		Velo of v	eity ind.		Inches.			
Date.	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	R.00 A. M.	8.00 P. M.	Rainfall in in
S 1 M 2 T 3 W . 4 T 5 F 6 S 7	30.04 30.04 29.84 29.83 29.86 29.86 29.86	80 79 75 77 72 70 72	92 86 86 88 80 80 81	68 72 64 66 63 61 63	67 71 95 45 52 47 65	70 76 80 70 4× 64 57	74 88	N.E. S.E. W. W.	S.W. S.W. S.W. W. N.W. S. N.W.	10 5 5 12 17 5 12	12 14 12 7 8 8	00000000	C.C.C.C.C.O.F.	.18 ·01
					_	_								_

*O., cloudy: C., clear: F., fair: G., fog: H., hazy; S., smoky: R., rain: T., threatening: N., snow. † Indicates trace of rainfall.

RECORD OF MORTALITY FOR THE WEEK ENDING SATURDAY, JULY 7, 1894.

	'nď	the	der years.	Per	centag	ge of de	eaths f	rom
Oities.	Estimated population,	Reported deaths in each.	Deaths under	Infectious diseases.	Consump- tion.	Diarrhosal diseases.	Diphtheria and croup.	Scarlet fever.
New York	1,956,000	979	519	32.80	9.30	24.00	5.10	1.10
Chicago	1,438,000	_	}	_	_	_	_	! -
Philadelphia .	1,139,457	605	336	33.92	6.08	27.84	3.20	.48
Brooklyn	1,013,000	607	393	39.52	5.60	31.04	5.44	.16
St. Louis	540,800	_	_	_	_	. =	_	-
Boston	501,107	196	65	14.79	11.22	6.68	3.57	1.53
Baltimore	500,000	I -	_		_		-	<u> </u>
Washington .	2×5,000	159	81	27.72	6.30	22.05	.63	-
Cincinnati	325,000		_		-			_
Cleveland	325,000	140	85	38.34	5.68	28.40	2.84	3.55 .82
Pittsburg	272,000	122	77	20.50	6.56	16.40	_	.82
Milwaukee	265,000		=	~ =			_	-
Nashville	87,754	29	14	24.15	6.90	13.80	_	_
Charleston	65,165	38	15	13.15	2.63	10.52	_	_
Portland	40,000		-9	04 06	-0 -	16.64		-
Worcester	100,410	24		24.96	12.48	53.76	4.16	_
Fall River	92,233	52	42 16	53.76 42.85	3.84	34.65	_	
Lowell	90,613	26 19	10	31.56	8.85 15.78	15.78	_	3.85
Cambridge	79,607	12	î	01.00	16.66	10.10	_	10.52
Lynn	65,123	17	13	64.68	10.00	64.68	=	_
Springfield	50,284	16	13	6.25		02.00	_	_
Lawrence New Bedford .	49,900	14	6	28.56	14.28	28.56	_	_
	47,7 ±1 43,348	29	15	51.75	6.90	37.95	_	
Holyoke Brockton	33,939	6	1	03.10	33.33	550		
0-1	33,155	ğ		_	50.00	_		_
Hamanh (1)	32,925	6	0	_	50.00		_	
Maldon	30,209	7	2	_	14.28		_	_
Chalana	29,806	6	2 2	16.66	33.33		_	
TM + ab brane	29,3:8) š	ī	_	-		11111111	8.33
Marrian	28,837	6	2	16.66	16.66		_	_
Gloucester	27,293	-	_	_	_	_	_	
Taunton	26,955	12	6	50.00	_	33.33	8.33	8.33
Waltham	22,058	4	0	_	25.00			
Quincy	19,642	i -	-	_	_	-	-	_
Pittsfield	18,802	4	1	_	25.00	-		11111
Everett	16,585	4	2	—	25 00	-	_	_
Northampton .	16,331	7	3	28.56	28.56	14.28	-	_
Newburyport .	14,073	3	1	33.33	_	33.33	_	_
Amesbury	10,920	1	U	_	_	-	-	
	1				1	1		1

Deaths reported 3,197: under five years of age 1,723; principal

Deaths reported 3,197: under five years of age 1,723; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhosal diseases, whooping-cough, erysipelas and fever) 1,055, diarrhosal diseases 801, consumption 250, acute lung diseases 184, diphtheria and croup 119, scarlet fever 28, whooping-cough 27, typhoid fever 22, measles 20, cerebro-spinal meningitis 14, malarial fever 9, puerperal fever 7, small-pox 4.

From whooping-cough Brooklyn 9, Pittsburg 4, Philadelphia and Washington 3 each, Cleveland 2, New York, Charleston, Cambridge and Newton 1 each. From typhoid fever Philadelphia 10, New York and Brooklyn 2 each, Boston, Washington, Cleveland, Pittsburg, Nashville, Lowell, Marlborough and Medford 1 each. From measles New York 8, Brooklyn 6, Cleveland and Holyoke 2 each, Philadelphia and Washington 1 each. From cerebro-spinal meningitis Boston and Washington 3 each, New York and Holyoke 2 each, Philadelphia, Worcester and Taunton 1 each. From malarial fever New York 6, Nashville 2, Brooklyn 1. From small-pox New York 4.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending June 23d, the death-rate was 15.7. Deaths reported 3,152: acute diseases of the respiratory organs (London) 201, measles 162, whooping-cough 86, diphtheria 69, scarlet fever 42, diarrhosa 39, fever 35, small-pox (London 5, Birmingham 3, West Ham, Wolverhampton, Manchester and Salford 1 each) 12.

The death-rates ranged from 8.3 in Leicester to 21.7 in Liverpool; Birmingham 19.4, Bradford 15.1, Croydon 9.3, Gateshead 13.4, Huddersfield 13.2, Leeds 14.5, London 16.0, Manchester 18.0, Newcastle-on-Tyne 18.3, Nottingham 17.7, Portsmouth 10.1, Sheffield 12.8, Sunderland 20.7.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 7, 1894, TO JULY 13, 1894.

CAPTAIN JAMES D. GLENNAN, assistant surgeon, now on leave of absence, will report without delay to the commanding general, Department of the Missouri, for temporary duty.

MAJOR EGON A. KOERPER, surgeon, granted leave of absence for one month on surgeon's certificate of disability.

The leave of absence for seven days granted Captain Paul Clendenin, assistant surgeon, is extended twenty-three days.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U.S. NAVY FOR THE WEEK ENDING JULY 14, 1894.

AMMEN FARENHOLT, assistant surgeon, ordered to Naval Laboratory and Department of Instruction, New York.

CHAS. F. KINDELBERGER, appointed an assistant surgeon in the U. S. Navy.

RECENT DEATH.

JOSEPH PAGANI, M.D., died in Boston, July 15, 1894, aged fifty-eight years. He was born in Borgomanero, Italy, of a family noted for many generations for its professional attainments. He graduated in medicine at the University of Pavia and received degrees from the University of Palermo and the Instituto Accademico Umberto 1 at Livorno. In 1885 he came to this country and after a short residence in New York settled in Boston. For his kindness to Brazilian subjects he received, in 1882, from Dom Pedro, the decoration of Chevalier de Buenos Ayres. In 1892 he was made Cazique and Baron Roxley in the Aryan peerage of Russia. He was a distinguished member of several medical societies, among which were l'Académie de several medical societies, among which were l'Académie de Médicine of Paris and the Societa Medicale di Roma. Dr. Pagani was prominent in all movements for the welfare of his countrymen in America.

BOOKS AND PAMPHLETS RECEIVED.

Albany Medical College Catalogue, 1893-94 and Announcement, 1894-95.

Charaka-Samhita. Charaka-Samhita. Translated into English and published by Avinash Chandra Kaviratna. Part IX. Calcutta. 1894.

Semi-Centennial Annual Announcement of the Eclectic Medical Institute, Cincinnati, 100th Session, 1894-95, with Catalogue of Matriculates and Graduates, 1893-94.

Nuovo Metodo di Cura della Tubercolosi Polmonare. Per el Dottore Carasso Giovanni Michele, Tenente Collonnello Medico, Direttore dell'Ospedale Militare di Genova. Rome. 1894.

Diseases of the Nose and Throat. By F. De Haviland Hall, M.D., F.R.C.P., Lond., Physician to Out-patients and in charge of the Throat Department at the Westminster Hospital, etc. With two colored plates and 59 illustrations. Philadelphia: P. Blakiston, Son & Co. 1894.

A Manual of Instruction in the Principles of Prompt Aid to the Injured, Including a Chapter on Hygiene and the Drill Regulations for the Hospital Corps, U. S. A., Designed for Military and Civil Use. By Alvah H. Doty, M.D., Major and Surgeon, Ninth Regiment, N. G. S., New York, etc. Second edition, revised and enlarged. New York: D. Appleton & Co. 1894.

Enormous Oval Hemorrhoid Encircling the Anus; Whitehead's Operation; Entire Cure. Operation Wounds of the Thoracic Duct in the Neck; With a Résumé of the Two Prior Recorded Cases and Two Additional Cases. Ligation of the Common and External Carotid Arteries and the Jugular Vein, for Arterio-Venous Aneurism of the Internal Carotid and Jugular, with Division of the Optic Nerve on the Opposite Side, the Result of a Gunshot Wound. By W. W. Keen, M.D. Reprints. 1894. 1894.

Tecture.

THE RANGE AND SIGNIFICANCE OF VARIA-TION IN THE HUMAN SKELETON.¹

THE SHATTUCK LECTURE FOR 1894.

BY THOMAS DWIGHT, M.D., OF NAHANT.

In 1878, an essay on "The Identification of the Human Skeleton" had the good fortune to receive the Shattuck Prize offered by the Massachusetts Medical Society. It is fitting that the same line of thought should be developed in the Shattuck Lecture.

In that essay were discussed the recognition of the sex and age of the skeleton, the method of estimating the height and of making proper allowance for such parts as might be wanting. To some of these questions I brought methods of my own, but for many points I was forced to rely on the statements in books, too often quoted one from another. No part of medical literature is so perfunctory, artificial and altogether

unsatisfactory as medico-legal anatomy.

During my professorship at the Harvard Medical School I have tried to use the material for original investigations, to find new criteria of sex and of age, to observe the degree of asymmetry between the two sides of the body, to learn how frequently anomalies occur which would vitiate the usual methods of procedure, and finally to study the question of the relation between the external shape of the body, its peculiar individuality, and the shape of the supporting framework. Though, as I hope to show, these researches have not been fruitless, yet some of these fields have yielded little. Attempts have exceeded performances. But if the man is to be pitied who can travel from Dan to Beersheba and cry "'Tis all barren!" much more is the anatomist worthy of compassion whose studies in the dissecting-room show him nothing but dry details of the structure of the body. It is his own fault if he brings no fresh learning to the great topics of the day. In these studies I have seen many luminous facts throwing light on the relations of the bodies of man and lower animals, on the peculiarities of prehistoric man, and on the process of development and growth. I shall not leave these quite without notice; but, speaking as I am to a medical audience, rendering, as it were, an account of my stewardship (for what is a professor in a medical school but the trusted servant of the profession?), I shall bring into strongest relief those parts of the inquiry which are of most practical value in medico-legal questions. It would require a course of lectures, rather than a single one, to follow the steps of my investigations. I wish as much as may be to spare my audience the details, giving only the results. I shall not, however, confine myself exclusively to my own work, as it is my purpose to show the present state of our knowledge.

In living nature each species suggests a more or less ideal type, the exact counterpart of which the student often searches for in vain. This type is not the expression of the mean development; it is far above that. It is the perfect individual. It is what in a show of animals or plants would be called a "prizewinner." It is in such a specimen that we would study the relative development of the different parts. We shall never reach this by compiling the means of vast numbers of specimens. This latter method, how-

¹ Delivered before the Massachusetts Medical Society June 12, 1894.

ever, if exercised with due care and discretion, will give us, not the type of the animal or plant as shown at its best, but the one most commonly met with. These two conceptions must not be confounded, for they are two different things, each of which has its place and its uses. When we come to Man, one ideal type is not enough. We should have to take each race by itself, were it not that I am dealing with the Caucasian alone. The difference caused by sex, however, requires one type for man and another for woman. Indeed, it may be said in parenthesis that this shows admirably the difference between the ideal and the What sort of a human figure would be average. reached by an average of measurements of males and This principle hereafter with advancing science must be carried even further, so as to recognize sub-types such as the tall, the short, the intermediate.

But nature shows the student more than type and the mean. It even disguises them by numberless variations in many, often in opposite, directions.

THE SEX.

Turning at length to the human skeleton, we find as in the whole body, two types, a male and a female. The typical skeleton reveals its sex so distinctly that none but a tyro would need measure and compass to find it. But to the anatomist there are many signs which to others are unknown, by which almost every This is not to say bone in the body reveals its sex. that it is always easy or even possible to decide on the sex of a skeleton. Far from it. We are confronted here with the effect of variation. The mean male or female skeleton is of course less easily recognized than the typical one. Then come those which have fewer and fewer characteristic points, till we find a certain number of which the diagnosis is very difficult or even impossible. My studies have been specially directed to these cases, among which we may reckon skeletons of which the most characteristic parts are wanting.

The sex has always been determined by the pelvis. I can reiterate my remark of sixteen years ago, that it is for that purpose of more value than all the rest of the skeleton. There is little or nothing to add.

The female pelvis is broad and the male deep. These remarks apply, however, chiefly to the true pelvis. There is some discrepancy in the statements, as to the transverse measurements of the false pelvis. While I believe it is true that as a rule the anterior superior spines of the ilia are farther apart in woman, I queston very much whether this is true of the most distant points of the iliac crest. Should the pelvis be wanting or too little typical to be conclusive, for such there are, we must turn to the general sexual characteristics of bone, which indeed will help us with the pelvis itself.

There is the male and female type of bone, there are the proportions of the body (which, however, are not of much use if the bones are separate), and there are the peculiarities of each bone. Of course the spheres of these different criteria fuse, one with another.

First, as to the general male and female characteristics. We all know that male bones are larger, stronger and more curved. Their ridges and projections are greater and rougher. It seems to be tacitly assumed that, excepting the mere size, these features depend on the greater muscular development of man.

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This I do not believe is the fact, at all events among civilized races. My observations go to show that female bones rarely assume the male development. never find, even in the strongest, the same rough surfaces and ridges, rarely the same thickness. There is one sign which has received little attention and which repays research. It is the small size of the female articular surfaces. I shall return to this again and again, for it is of the greatest significance, and as all the bones have joints, of the widest application.

Next, as to the proportions of the figure. small thorax, both short and narrow, is essentially female. While it is true that the lumbar region of the spine is relatively longer in woman, the chief factors in the shortness of the thorax are the short sternum and small lower ribs. Add to this the relatively slight development of the upper extremities, and we are ready for the study of the individual bones.

The sex of the skull is very often fairly easy to The relatively small size of the face, the lightness of the jaws, the small size of the superciliary eminences, of the occipital protuberance and ridges, and of the mastoid processes of the female are very suggestive. One feature, which I think of much value, is the more sudden change of direction from the forehead to the top of the skull in woman. Another, which we owe to Professor Cleland, is the more marked elevation above the occipital condyles in man, which throws the face higher up, departing more from the infantile condition which lingers in woman, as is shown by the more prominent frontal and parietal eminences. As a specimen of the male skull I show one which its late occupant would have been glad to have size and delicacy of build, constitute the sexual charso used,—that of Spurzheim, the phrenologist.

The studies which I have undertaken on bones of the trunk and limbs must be given at some length. In my previous essay I had discussed on the basis of a very small number of observations of the sternum, the value of Hyrtl's law that "the manubrium of the female sternum exceeds half the length of the body, while the body of the male sternum is, at least, twice as long as the manubrium." I found then, curiously enough, that the averages of my measurements confirmed that law, but that the exceptions were equal to the cases in accord with it. More curiously still, I found this result repeated in a series of measurements large enough to be satisfactory (those of 228 bones), with the difference that the exceptions amounted to almost precisely 40 per cent. Thus, though the law still held true in averages, it would fail to apply to two bodies out of five, and thus would be useless for the determination of any particular case. Farther, as yet unpublished, observations have raised my numbers to 342 sterna, of which 222 were male and 120 female. My results once more confirm Hyrtl's law for the mean, but still approximately 40 per cent. of the cases are exceptions, owing to the variability of this bone.

Strauch found in addition that in male and female sterna of equal length, the former is narrower in the manubrium and in the lower part of the body. According to him, the female sternum is relatively (but not absolutely) broader than the male one. Hence we conclude that though averages may deceive us, yet it is possible to recognize very distinctly a male and a female type of breast-bone. The former with a relatively long and regular body, the lower parts of which are well developed, separating the attachments of the

ened below and having depressions of the lower cartilages close together, indicating a want of development of the lower sternebræ. Intermediate forms of difficult diagnosis must occur. In these I should look on relatively large or small clavicular facets as signs of male or female sterna respectively. Here are more or less peculiar specimens. In this, which happens to come from a negress, the body ends opposite the fourth or fifth cartilage.

The separate bones of the spine and ribs offer little

that is of practical value.

The whole upper extremity is much lighter in woman. The lighter shoulders rest on a smaller and relatively narrower thorax. The collar-bones are very characteristic. Strong, long, and boldly curved in man, they are slight, short and straighter in woman. The degree of curve is less characteristic than some other features, as we sometimes find slight but strongly curved clavicles in woman and strong straight ones in man. This depends on the peculiarities of the figure. The largeness or smallness of the articular surfaces is of much importance.

The shoulder-blade is an extremely variable bone. To me it is very interesting. I imagine that I shall surprise my hearers in speaking of its sexual characteristics as very remarkable. The scapular index, that is the ratio of the breadth to the length, need not be discussed, though I have measured 198 bones for this paper. Its sexual significance is practically nil. previous paper I have given drawings of two widely different scapulæ with almost identical indices.

While it is very difficult to state what, beyond small acteristics of the female scapula, yet there is no question that in well-marked cases it has a characteristic type. In my opinion, a competent expert can decide with great probability the sex of the scapula in at least four out of five of a considerable number of bones taken at random.

The mere question of size is an important one. I have examined the bones of 123 bodies, 84 male and 39 female, in which the height and breadth of shoulders were known, and have taken the length, breadth and index. By far the most useful of these measurements is that of the length, as shown in the following table:

LENGTH	OF	SCA	PULA

Length of Bone.			1	Male. Number.	Female. Number.
From 13 to 14 cm.					10
From 14 to 15 cm.				3	13
From 15 to 16 cm.				10	11
From 16 to 17 cm.		•	•	32	5
From 17 to 18 cm.				30	••
From 18 to 19 cm.				8	••
From 19 to 20 cm.				1	••

Average length of male bone, 16.8 cm. Average length of female bone, 14.7 cm.

As the two sides usually differ, I have in this series always taken the longer bone.

Thus it appears that of 123 bones 26 measure less than 15 cm., of which only 3 were male; also that 76 measure 16 cm., or more, of which only 5 were female. There is no single instance of a bone measuring less than 14 cm. being male, nor of one measuring 17 being female. It is needless to say that exceptions would be found in a very large series, but these limits are very valuable.

I have studied the dimensions and proportions of the lower cartilages, the latter with a shorter body, broad- glenoid cavity on 90 bones, of which 63 were male and

27 female. In brief, the female socket is not only smaller but relatively narrower. The average male length is 3.92 cm., and the female 3.36. Very few male sockets are less than 3.6 cm., and very few female ones as long.

When it comes to examining the various parts of the bone, one by one, it is very difficult to find sexual characteristics that will stand rigid examination; none the less, I have little difficulty in defining a typical female scapula. It is more easy to do so than to define a male one, as the latter is more variable. The greatest length should not exceed 15 cm., and that of the glenoid should be about 3.4. The latter should look narrow and delicate. The inferior angle is sharp, the posterior border straight as far as the spine, its upper portion inclining forward. The upper border shows a sharp descent from the superior angle to the supra-scapular notch. The process for the teres major at the lower end of the axillary border is small. The coracoid is remarkably delicate, its end is compressed instead of knobbed. The acromion is narrow, of the shape called falcate by Professor Macalister. In the male the lower angle is broader, the teres major process more developed. The posterior border is rather more rounded, the upper border more horizontal and higher, so as to make a larger supra-spinous fossa, the coracoid is thick with an approach to a knob at the end. The acromion larger, squarer, with a large clavicular facet.

In view of the considerable difference in size already mentioned, it is plain that the sex of most shoulderblades may be determined by that alone beyond reasonable doubt. Many bones, however, are of the doubtful size. These, in my opinion, can for the most part be sorted out by an expert. A small residue is not to be recognized. A bone the sex of which cannot be told is more likely to be male than female. We may feel reasonably sure that it does not belong to a tall man or a short woman. There are exceptions to all rules. Here is a female scapula which both in size and shape is distinctly masculine, yet it came from a short and fat old woman with a short neck and high shoulders. It is perhaps relevant to state that she was insane; as it is thought that structural peculiarities are often found in the deranged.

The female humerus, radius and ulna show far more strikingly what I have called the general femininity of their structure, than the bones of the thigh and leg. Though I do not in this case speak by the book, that is by measurements, I believe that the difference of size is greater between male and female humeri than between the femora. It is generally thought that the female humerus is more slanting than the male, that is to say makes a smaller lateral angle with the extended and supinated fore-arm, but Berteaux's measurements make the difference too slight to be worth much. The articular ends of bone of both arm and fore arm come to the rescue, but I regret that I have no series of measurements large enough to

The femur has rightly received much attention. It is a favorite of anatomists. I have, therefore, the advantage of valuable observations of others to compare with my own. I may in particular refer to the works of Humphry, Broca, Mikulicz, Charpy and Berteaux. The monograph of the last on the humerus and the length of the femur, let us take certain parts.

My observations on these details are founded on 64 cases, 38 men and 26 women, in which the body was measured before dissection and the bones studied in detail later. The length of the neck of the femur is on the whole in direct ratio to the length of the shaft. That of woman is therefore on the average the shorter, but there is no relative sexual difference worth noting. Berteaux has shown moreover that the relation of the thickness of the neck to its vertical breadth is the same in the two sexes. The augle which it makes with the shaft has long been a moot point. It has been taught that it is less (that is to say nearer a right angle) in shorter femure, and if a short femur joins a broad pelvis, as in woman, by so much the more is the angle decreased and thus the angle is smaller in woman. This is diagrammatic demonstration which I long taught with perfect good faith. Of late years, however, it has been disputed by several observers, some even maintaining the reverse. My own observations, taken with others, convince me that there is probably no sexual significance in the angle (with one reservation to be presently set forth). The average in the two sexes is about the same, that of the women being indeed in my series a trifle the greater, thus in men 125.1°, in women 125.6°. Like every one else I find that there is a great individual variation, ranging from 110° to 144°. Be it noted by the way that the lowest is in a man and the highest is in a woman. But in the male bones there seems to be no regularity in the distribution of these variations. In man a long or a short femur is about equally likely to have a large or a small angle; but the shorter female ones tend to a lower angle.

There is, therefore, this much truth in the old idea, that the shortest, but I do not say the most typical, female femurs have angles below the average, as proved by the following observations. The average angle of the longer half of the male bones is 126.5°, and that of the shorter 123.6°, while the longer and the shorter halves of the female series give 129.2°, and 121.9° respectively. It appears also that the highest angles of all are in the longest female femurs, but I doubt whether this connection is so regular as that of the short ones. This shows, however, that as a whole this angle is of little value as a sign of

Another angle which has been thought to have more or less significance is that of the shaft with a vertical line, which according to the old theory should also be greater in shorter bones and wider pelves, and therefore associated with a smaller cervical angle. An analysis of my tables shows no system of relation between these angles. On the other hand the average inclination is a little less in the male than in the female, being 9.3° and 10.6° respectively. This is too small to be of any practical value, especially as the individual variation is very great.

Some other measurements seem to throw more light on this matter. They tend to establish the theory that the small size of joints is characteristic of woman. They are the greatest diameter of the head of the femur and the greatest transverse breadth through the condyles. The average diameter of the male head is 4.8 cm., that of the female 4.15. My tables show one marked difference between the sexes; namely, that in the women there is a fairly regular increase in the size femur is a mine of information. Leaving aside the of the head corresponding with the increase in length of the femur. Among the men this is not so. While it is true that most of the largest heads are found in the longer half of the bones and most of the smallest in the shorter half, the correspondence is far less evident. I find, moreover, that but two of the male bones have a diameter of less than 4.5 cm. and but two of the female a greater. Both these female bones were among the longest, but the two male were but a little below the average. Thus it would seem that the actual measurement of the head of the femur is a pretty good criterion of the sex. The measurements of the knee are less conclusive. The average difference is just under one centimetre (8.3 and 7.3), but there are more that overlap.

Moreover there is a peculiarity in the shape of the typical male and female thigh bones which defies mathematical statement, which indeed I found very difficult to define long after I was aware of its pres-It is not merely that the typical female bone is more slender, as in fact everybody knows, but that seen from the front it has a peculiar outline. shaft narrows gradually from the condyles till, at or above its middle, a part is reached that is narrower than elsewhere, above which there is a much less evident expansion. The typical male bone narrows much more suddenly from the condyles, so that the stout shaft soon reaches a tolerably uniform thickness. rear view shows more distinctly that the male peculiarity seems to depend on the greater lateral projection of the outer condyle. Exceptions are plenty, but for all that there seems to be a pretty distinct difference of type, which with the help of certain measurements should enable us to determine the sex in most cases. I may mention that with the exception of a third trochanter (of the true kind) peculiar forms of femur are almost always male.

The tibia is in many respects a very variable bone. As a rule its greater delicacy of structure in woman is very plain. The smallness of the articular surfaces is striking. It is easy for an expert to judge rightly of its sex in most cases, though beyond the signs mentioned there is nothing absolutely characteristic.

While it appears from this discussion that there are certain mathematical considerations of great value in determining the sex, I would say emphatically that I consider the intelligent familiarity with bones which develops what might almost be called an instinct, more trustworthy than hard and fast rules, resting on the dreary accuracy of statistics.

I have here bones from two widely different bodies which are interesting in this connection. One was an uncommonly good, even a graceful, figure of a young woman, were it not that the shoulders were somewhat too square and heavy. The bones are all remarkably graceful, though rather strong. The femur has the characteristic female outline. In spite of the comparatively heavy shoulders the scapulæ and humeri are distinctly feminine. The other was one of the largest and most powerful looking female bodies I ever dissected, except that the hands and feet were small. She had been a factory hand. The femur is an uncommonly powerful bone for a woman, but the small head, as well as its outline, suggests the sex. The bones of the upper extremity are evidently female. The slight development of the shoulders in women is therefore a recognizable feature in the bones. Contrast the bones of this large woman with those of a slight young man, of whom more later.

(To be continued.)

Original Articles.

A CASE OF PRIMARY TUBERCULOSIS OF THE FEMALE BLADDER DIAGNOSED AND TREATED BY HOWARD KELLY'S NEW METHOD OF DIRECT INSPECTION WITH LARGE ENDOSCOPES.¹

BY W. L. BURRAGE, M.D.

THE case 1 have to present to-night is of especial interest, both on account of the rarity of the disease, and, as illustrating the successful employment of a new method of investigating and treating diseases of the bladder and ureters in women, a method that is, in my opinion, as much superior to all former methods as the electric cystoscope was to digital exploration.

Our ability to see and treat all parts of the bladder interior directly, as I am about to describe, is destined to revolutionize diagnosis and treatment in bladder, ureteral and kidney diseases in women. We must see as well as feel ulcerated areas and new growths, and define their limits. The diagnosis, for instance, of urinary tuberculosis will no longer be deemed sufficient. We must be able to say whether or not the disease is confined to the bladder, or is located in one or the other ureter or kidney, or in all.

Before reporting the case it is my purpose to say a few words as to the usual methods of bladder exploration, and then briefly describe the new method, and show you the instruments.

The previous recognized methods of exploration of the female bladder have been:

(1) Bimanual examination, with the uterine sound in the bladder, the finger in the vagina, and the other hand on the abdomen; or, without the sound.

(2) Digital exploration, the urethra being first dilated to not more than twenty millimetres by means

of graduated dilators and the finger.

(3) Endoscopy, by means of a straight tube of hard rubber about seven centimetres long and ten millimetres in diameter, open at its inner end and carrying a glasstube closed at its inner extremity. The glass-tube projects a little beyond the hard-rubber sheath and has in it a little mirror inclined at an angle of one hundred degrees. The mirror being attached to a long handle may be moved forward or backward and turned around. Light from an Argand burner, or direct sunlight, is reflected from a head mirror to the little mirror in the tube and thence into different parts of the bladder wall. The rays of light pursue the same path back to the operator's eye at the focus of the head mirror.

(4) Cystoscopy, by means of an instrument made on the same plan as the endoscope, except that the source of the light is an electric lamp in the end of

the instrument in the bladder.

(5) We must enumerate also examination of the interior of the bladder through a vesico-vaginal fistula

or opening made by supra-pubic cystotomy.

Examination by touch has been of great use, and will continue to be; but it cannot rival in value, either from a diagnostic or therapeutic point of view, examination by sight. With the endoscope and cystoscope the bladder has to be partly filled with a perfectly clear, transparent fluid in order to be inspected. In most bladder affections the urine is cloudy, and the walls can be cleaused with difficulty; besides, the

¹ Read before the Boston Society for Medical Improvement, April 9, 1894.



urine constantly coming into the bladder from the ureters may tend to render it cloudy; and also only a portion of the bladder interior can be inspected, owing to the necessary obliquity of the mirror in the instrument. We must add, as a further objection to endoscopy and cystoscopy, the distortion of the image, due to errors of refraction of the fluid media through which the light passes. Our knowledge of the appearance of the interior of the living bladder both in health and disease is largely due to the investigations of Mr. E. Hurry Fenwick, of London, with the electric cystoscope.

Catheterization of the ureters has been practised more or less extensively ever since Prof. G. Simon published his work on the subject in 1875. He dilated the urethra; then, passing his finger into the bladder, located the ureteral orifice by touch, and passed the

catheter along his finger into the ureter.

Professor Pawlik, later on, improved on this method by demonstrating landmarks in the vagina which serve to locate the ureters; then passing the catheter into the bladder he observed the play of its tip on the anterior vaginal wall and directed it into the ureteral openings. He also improved the catheter. By Pawlik's method the dilatation of the urethra with the attendant danger of subsequent incontinence, was done away with, and the seriousness of the operation lessened.

Professor Sänger at this time demonstrated that the ureters in their lower course can be palpated per

vaginam.

Prof. Howard A. Kelly of the Johns Hopkins University published two valuable papers in the Annals of Gynæcology and Pædiatry for May and August, 1893, in which he gave the results of his researches on the anatomy of the ureters and formulated exact rules for catheterization. He presented a new catheter.

While house-surgeon at the Woman's Hospital in New York I had the opportunity of following Dr. Nathan Boyeman's work on the bladder and ureters. In cases of cystitis and ureteritis he made a vesicovaginal fistula, and irrigated the bladder and catheterized the ureters through the openings so made. It was his routine treatment to irrigate the ureters and pelves of the kidneys by means of small English gumelastic catheters. With a catheter in the pelvis of each kidney it was a part of my duty to catch the urine as it came drop by drop from the catheters—note the rate of flow on each side—and finally analyze each specimen chemically and microscopically. Today this work is done without cystotomy.

It was not until January of this year that Howard Kelly published in the American Journal of Obstetrics his article on "The direct examination of the female bladder with elevated pelvis. The catheterization of the ureters under direct inspection, with and without elevation of the pelvis." I hand you a reprint of this article, which is the basis of my work. As you see the very good illustrations do away with the need of

much explanation.

The main steps of the procedure consist in emptying the bladder with a catheter; in elevating the patient's hips from eight to twelve inches, so that the residual urine will run up to the fundus, and the weight of the abdominal viscera being removed the bladder is distended with air; in the gradual dilatation of the urethra and the employment of large, straight, open endoscopes, which, by the way, are fitted with

handles for ease of manipulation; and in the use of a strong light from an Argand burner or electric lamp held near the pubes, and reflected into the bladder by a head mirror. The graduated dilators are passed until sufficient calibre has been obtained. Kelly says many take No. 16. I have found Nos. 12 and 14 to pass easily in most cases. Suppose a No. 12 dilator passes, then introduce the speculum of the same size and remove the obturator. Thus by means of a simple speculum and proper posture all parts of the air-distended bladder are rendered visible. To inspect the upper and anterior zones the patient is placed in the knee-chest position. If there is a pool of urine in the bladder it is removed by a simple suction apparatus. Applications may be made to all parts of the bladder and urethra. Small quantities of urine are removed by pledgets of cotton held in delicate mouse-toothed forceps, and applications are made with a cotton-wound applicator. The ureteral openings are seen as little slits in the mucous membrane, and if watched urine may be seen issuing from them. A probe with a long handle bent at an obtuse angle is of use in verifying the position of the orifices. The ureters are catheterized with Kelly's catheter, the patient in position with hips raised, or flat on the table.

The necessary instruments are, four specula with obturators, Nos. 8, 10, 12 and 14; and four dilators, Nos. 7 and 8, 9 and 10, 11 and 12, and 13 and 14; mouse-toothed forceps; ureteral searcher, or long, bent probe; ordinary applicator; and one ureteral catheter. The dilators and specula are calibrated in millimetres; for example, No. 10 is ten millimetres in diameter, No. 12, twelve millimetres, and so on; a good light held near the pubes, is essential to success in this field of work.

I show you my set of instruments. I find two ureteral catheters more convenient than one, because the operator does not always care to spend the time to clean one catheter before catheterizing the second ureter.

Mrs. J. F., twenty-six years old, married seven years, and sterile, was referred to me October 17th,

1893, by Dr. N. K. Noyes, of Duxbury.

From Dr. Noves's notes and from conversation with the patient the following history was obtained: Grandmother died of heart-trouble; mother and father and two sisters living and well; uncles and aunts of father died of consumption. There was consumption on the mother's side a generation back. The patient was not very strong as a child, being subject to coughs and colds. At nineteen years of age she had whoopingcough and later in the same year rheumatic fever. At twenty-one she had pneumonia, and three years ago had the grip. Husband is living and well. She suffered with inflammation of the bowels when she had rheumatic fever, and has had an attack each year for the last three years, being sick in bed for two or three months with each attack; the abdomen during these attacks would be swollen and tender. She had absolutely no trouble with her urine until August, 1893, not even with the attacks of inflammation of the bowels. A short time before the beginning of Mrs. F.'s urinary difficulty she spent the night at a house where her sister's husband was dying of general tuberculosis, and she was in and out at the house a good deal at that time.

of the urethra and the employment of large, straight, open endoscopes, which, by the way, are fitted with when she was suffering with an attack of what he diag-

nosed as subscute peritonitis. The abdomen was tender, very slightly swollen, and she had a temperature of from 99° to 101° for five or six days. She was in bed for a month, the pain and soreness being very persistent.

In December, 1892, she complained of a "bunch low down in front passage" and pain in the back. Dr. Noyes diagnosed retroversion, and treated her for it for three months by packing and then fitted a pessary. The pessary failed to keep the uterus in good position, however. She wore it until August.

August 30, 1893, Dr. Noves was called to see patient, and found her suffering from severe pain in lower part of abdomen, associated with swelling and great tenderness. Temperature 103°. Large doses of morphia relieved the pain, and in two or three days the temperature declined to normal. Patient took a vaginal injection of a pint of hot water just after the beginning of this attack. Two or three hours after, she began to have painful micturition, and has had it ever since. Pain near the end of micturition, which was every hour or two; urine cloudy and often bloody. After a time the pain became nearly continuous, and the frequency of micturition was at times as often as every few minutes. The bladder was irrigated every few days with some relief. She was catheterized for the first time in September.

Previous to the occurrence of the urinary difficulty she had made arrangements to enter St. Elizabeth's Hospital for operative treatment for retroversion and supposed peritonitis. She entered the hospital October 17, 1893. I saw her on the following day and found a well-developed and nourished woman of large frame, and of dark complexion. The uterus was retroverted in the third degree, replacable, two-andthree-quarters inches deep; ovaries and tubes not felt because the vagina was very long and roomy and the abdominal walls thick and tense. She was put on salol, gr. v., t. i. d., and prepared for exploratory abdominal section and ventral fixation. Urine slightly cloudy; no albumin. Heart and lungs negative.

Operation, October 25, 1893. Ether. Curretting the uterus brought away very little tissue. On opening the abdomen with a three-inch incision the uterus was found on the floor of the pelvis in the third degree of retroversion. Ovaries and tubes normal to feel and sight. No adhesions anywhere. The bladder wall felt thickened universally. Both ureters were palpated from the broad ligaments to the pelves of the kidneys, and nothing abnormal felt. Uterus anchored to abdominal wall by two stitches of fine twisted silk (No. 1) passed through each round ligament at a point one inch from the uterine cornu, and then through the parietal peritoneum and overlying fascia one and a half inches from the median line and at right angles to the incision. Toilet of peritoneum, and wound closed in usual manner.

Patient developed a mural abscess and an attack of bronchitis. Temperature not above 100° at any time. The painful micturition was a prominent symptom soon after the operation, and the bladder was irrigated daily with a one half-per-cent. solution of boracic acid, and the salol was continued. Urine slightly alkaline, and containing a trace of albumin and much pus.

November 2d, the bladder was injected with glycerine (3i) and iodoform (3ss), and this was continued porary relief of pain. She was then convalescent ter, easily bleeding with slight touch, and studded here

from the bronchitis; the wound was healed; the uterus was in good position, where it has remained since. There was no special tenderness over bladder at any time. Urine alkaline when not taking benzoate of ammonia or benzoic acid; cloudy and containing a small amount of pus; specific gravity generally about 1.012; a trace of albumin.

Endoscopic examination November 24th showed injection of upper urethra and bladder above trigonum. The bladder neck and upper urethra were swabbed out with nitrate of silver, 1 to 60, every third day for two weeks, with relief for twenty-four to thirty-six hours after each treatment. Various diluents for the urine were tried, and a large variety of drugs to relieve the pain, but with only temporary benefit.

She was discharged December 22d, and instructed to take citrate of potash and buchu. Repeated examinations of the chest failed to reveal evidence of anything but bronchitis.

Mrs. F. entered the hospital for the second time January 31, 1894. She complained of the frequent and painful micturition about as before. The urine was cloudy; of specific gravity of 1.010; slightly alkaline; albumin absent; twenty-four-hour amount only 12 to 14 ounces.

February 5th. Endoscopy by Howard Kelly's method. Not having Kelly's new specula at that time the examination was made with a Skene endoscope tube 10 millimetres in diameter, the patient's hips being raised. I made out a reddened area that bled easily, situated in the right posterior inferior zone of the bladder. It was studded with little grayish, glistening, translucent bodies the size of the head of a pin and raised above the surrounding surface. looked like the miliary tubercles seen in peritoneal tuberculosis. The upper urethra was injected also. Ether was then given, and the urethra was dilated to admit my forefinger, which is 13 millimetres in diameter at the largest joint; and the patch was scraped with my finger-nail, and then touched with a ten-percent solution of nitrate of silver. Dr. J. M. Jackson examined the urine two days after the operation and found very numerous tubercle bacilli in a urine typical of cystitis. The bladder was irrigated twice daily with a warm solution of boracic acid and later with a very weak solution of tinct. myrrh. The myrrh gave more relief from pain than any other local treatment except the late effects of the nitrate of silver applica-She took oil of sandal wood by the mouth for two weeks without benefit, also belladonna, hyoscyamus and citrate of potash and buchu. Bromide of potash in 20 grain doses, frequently repeated, gave as much relief as any medicine that was taken internally.

February 21st, I made an examination of the bladder with Kelly's instruments, having failed a few days before because of the abundant flow of urine following the administration of citrate of potash and buchu. No anesthetic was necessary in this or subsequent examinations. No. 14 endoscope was easily passed. With the hips elevated and with the patient in the kneechest position the entire interior of the bladder was inspected. The ureteral orifices were found as slits in the slightly elevated papillæ. No evidences of inflammation about either orifice. In the posterior inferior zone of the bladder, and situated one centimetre above the right ureteral orifice, was a reddened area, circuevery other day until November 24th, with some tem- lar in shape, and one and a half centimetres in diameand there with the glistening, grayish bodies before described. I picked off one of these and gave it to the pathologist. He said it was too small for exami-I catheterized each ureter, and obtained what appeared to be normal urine from each. amination by Dr. Jackson failed to reveal the presence of tubercle bacilli in either specimen. Although negative evidence in cases of urinary tuberculosis is not conclusive. I felt that the risk of carrying contagion up the ureter on my catheters was good reason for not obtaining further specimens.

Examination of the urine, March 2d, by Dr. Jackson, showed it to be cloudy, alkaline, 1.017, with a faint trace of albumin. In the sediment was a large amount of bladder and squamous epithelia, a few small round cells, much fresh blood, a considerable number of leucocytes, and a great number of bacteria and

spores.

March 9th. She had an attack of pain and tenderness in the abdomen, associated with a cough. There was no temperature. Examination of the chest showed a few moist râles and high-pitched respiration in both backs, but nothing further.

March 14. I made another examination of the bladder with the No. 14 speculum, and confirmed my previous diagnosis. I curetted the reddened area with a Simon's spoon curette, and touched it with ten-percent. solution of nitrate of silver. There was moderate bleeding at the time.

Mrs. F. left the hospital March 20th.

Dr. Noyes writes, under date of April 7th: "At present she is in bed about all the time, because to be up causes more pain. The bladder is being irrigated twice daily through a soft-rubber catheter with four ounces of plain boiled and filtered water, and she is taking five grains of benzoic acid four to six times daily. I saw her yesterday, and she said she had very little pain except during and for a short time after urinating. She urinates only every three to four hours during the night, and every one and one-half to two hours during the day. She eats well, sleeps fairly well, and looks well."

The obstacles in the way of diagnosis have made the literature of primary tuberculosis of the female bladder somewhat meagre. Most of the work in the field of vesical tuberculosis has been done on the male. The text-books confine themselves to general state-They give an unfavorable prognosis, though relatively more favorable than in secondary tuberculosis.

Pozzi says the duration of the disease may be estimated as from one to two years, but cases have been known in which it lasted from five to teu years with-

out affecting the general health.

Fenwick said, in 1890, that most cases died in three years. But in 1892, in a paper on "The Mimicries of Primary Urinary Tuberculosis," published in the British Medical Journal for May 28th, he made the following statement: "After having watched the progress of over a hundred cases of urinary tuberculosis, I have come to the conclusion that when it attacks the lower division of the tract, the bladder, prostate and urethra, and is wisely treated, it exhibits as marked a tendency to obsolescence, or even cure, as the same disease when situated in the lungs." He also said, that, even when the disease was situated high up, the prognosis was better than was generally admitted.

I have not time to go into the question of infection -

process ascends from bladder to ureters and kidneys; or whether it is excreted by the glomeruli of the kidney and travels downward to the ureter and bladder. Both views are advocated by eminent authorities. Fenwick says primary vesical deposits first appear on the posterior wall of the bladder, as in my case.

The symptoms are frequent micturition, not relieved by rest, as is the case in stone; pain, especially at the

end of micturition; and blood in the urine.

The object of treatment in chronic tubercular cystitis is to render the urine unirritating, and, if possible, germicidal by means of diet and drugs; and to remove mucus and uric acid deposits as sources of irritation by irrigation; also to destroy the bacilli by the direct application of caustics and germicidal agents; and to relieve pain. The system should be built up by cod liver oil and tonics. A milk diet is of great benefit as a diuretic, also plenty of water. The drug that has the best reputation is benzoic acid. Tyson recommends it in the form of five-grain pills; at least thirty grains in the course of the day. The potash salts, especially the citrate and acetate are of great use. In a general way we employ the alkalies to dissolve uric acid deposits and to prevent them, and benzoic and boric acids to dissolve the phosphates. drugs that are well spoken of, are: buchu, triticum, repens, corn-silk, sandal-wood, copaiba, eucalyptus and resorcin. Salol has been found to prevent the growth of the staphylococcus in the bladder; but, by the statement of Rommalaere, the bacillus of tuberculosis resists it absolutely. It is certainly a valuable drug on empirical grounds alone.

As local treatment, the bladder should be irrigated at least once a day. Tyron says that tepid water, four to six ounces is as good as anything, and relieves pain better than other injections. He also advises very

weak bichloride, 1-26,000.

Other remedies that stand well are borax, one drachm to a pint of warm water; common salt in the same amount; salicylate of soda, one drachm to the pint; alum enough to give an astringent taste; nitrate of silver twenty grains to the ounce; and creolin, one per cent. Guyon uses bichloride, 1-5,000 to 1-1,000, twenty to thirty drops at a time. Loumeau also uses strong bichloride.

Guyon and Reverdin have obtained excellent results by curetting and cauterizing the ulcerated area through an opening in the bladder made by supra-pubic cystotomy. With our new method the cystotomy will often

prove unnecessary.

For the relief of pain morphine is to be avoided. Skene recommends bromide of potash, twenty grains every four hours. I have found it of great use in frequent and painful micturition in chronic cystitis.

METHOD OF STUDY FOR MEDICAL STUDENTS AND YOUNG MEDICAL GRADUATES.

BY E. R. AXTELL, M.D., DENVER, COL. Professor of Histology and Bacteriology, University of Denver, Medi-cal Department; Neurologist to the Deaconess Home Hospital; Path-ologist to the St. Luke's and Arapaka County Hospitals.

AT this time students have been released from their winter's work, the spring courses have been completed and a few weeks of rest have supervened. Ambitious students are now taking up their books and wondering where to commence their work and how best to syswhether the bacillus is introduced from below, and the tematize it for the best results. Certain students are studying in definite paths for definite ends; hospitals, prizes, positions of various kinds. The purpose of this article is to point out to those who have the summer before them how best to do the best work possible. It is unfortunate that a single medical student should be compelled to work hard at some laborious occupation during the summer months that lie between the sessions of his school. It is true that many of our brightest men have done so, but certainly those months can be well employed in study. There is no profession in which there is so much knowledge to be gained as in the medical profession, and it is well said that no one man can gain it all.

It is particularly true that all things can be bought except knowledge. The knowledge that we put away in our brain cells, we must work for and work for diligently.

For the best summer's work three things are essential, a good capable preceptor, a stated schedule of work and a method of study.

Let the student look about him for his preceptor. He should be a man, twenty-seven to thirty-five years of age, one who has done some writing for the medical press, a man who is engaged in college work or in some progressive investigation. A man who is yet young in the medical profession; one who is not too busy and who is ambitious. There are many of just such men in every city of any size and as I review my knowledge of the men in smaller places, that I have visited, I see them there. If the student cannot find such a man let him consult his old family physician. Do not accept the services, however, of the "old doctor" if he wants to be the preceptor. All honor to the noble old men of our profession! Never did there live such an array of grand old men, but the old doctor as we may all affectionately call him, is too busy a man, he has lost some of the fire of youthful ambition, he is not as pleased with the germ theory of disease as he might be, he is not the reader of the text-book that is now put into your hands.

Choose your teacher, ask him to tutor you, to assign your lessons, to hear you recite for one or two hours on Tuesday and Thursday of each week, and on every Saturday to have prepared for you a series of ten questions, which you are to answer, not orally but in writing. Arrange with him to mark these papers carefully and closely and to point out the deficiencies.

Make a reasonable money transaction of the arrangement. Ten dollars a month per student is a nominal fee.

Look about you and try to secure a fellow student. If you can arrange to have your rooms together, so much the better. A fellow compeer makes competition, stimulates work and sharpens the mental activity and keenness of you both.

Arrange for instruction in June, in July, for two weeks in August and for two weeks in September. Then to work! Do not try to accomplish too much, but do the little well. What you are working for during these holidays is not practical work but theory. Get theory first, then practice, time enough then to review your theory. As a practitioner of medicine you must have most of your knowledge available at all times. You cannot read, you have no time for reading when you stand before a case of uremic convulsions, before edema of the glottis, before a case of post-partum hemorrhage. You must act. How can you act when you have no knowledge of what should be done?

Thousands of young medical students make a mistake in allowing themselves to be entangled by practical work before they are ready for it. Many a physician has used the ready hands of a young medical student, when that student should have been at his books.

My old preceptor had me passing catheters and assisting at fractures and dislocations long before I should have done any work of that kind. Of what value was it to me to pass a catheter when my knowledge of the anatomy of the urinary tract and of the cause of the retention of the urine was so cloudy? Of what use was the reduction of a dislocation to me when the anatomy of the joint was so obscure? Every medical student should have some hospital training, he should study medicine with that expectation and he should certainly strive for that goal. Let a large bit of the practical work go until that time comes.

Summer is usually a poor time to attend clinics. The professor in attendance is not stimulated to work; but little is said of the cases as they are seen and the result is that the instruction to be derived is slight.

If your preceptor does not give you a time-table to guide you in your work, adopt this. Other students have followed it closely for months and months. What one man has done another man can do. You have agreed to work.

On every week day you are to rise at 6 A. M. hour is given for the toilet and for breakfast. Tuesdays, Thursdays and Saturdays, the days on which you recite, review your lesson from seven until seven forty-five. If you recite from eight to nine, walk to the place of recitation, and after it is over return to the room at once and study until twelve. From twelve to one get your noon-day meal, which under the schedule I am giving you should be the main meal of the day. From one to two in the afternoon you should go to bed. Do this in earnest. Throw off your clothes, don some cool sleeping gown and darken the room. Your alarm clock will tell you when it is two o'clock. From two to five you study. From five to six you exercise. Walk, ride, use some Indian clubs, box or wrestle. Some of the greatest tussles of my life occurred between my room-mate and myself, between the hour of five and six. Supper is taken from six to seven. Then a rest until seven thirty. Then study until ten. Go to bed at once. This advice I am free to say I did not always follow, but it is good advice.

On the days that you do not recite your study hours are unbroken.

Wednesday night is your night off. Go to the open-air theatre, visit your friends, take a car-ride or a drive. On Sunday you are not expected to study. Read the papers for the week, write letters and take recreation. You will find, however, that your Sundays of rest will not be more pleasant than your days of work. The acquirement of knowledge is a pleasant thing, and when once ambition whispers you become a willing slave. Quickly speed the days away. Your summer's vacation will have passed before you are aware. In August take two weeks from study. Go into the country, rest your eyes, get a little sunburned. Come back full of life. Study two weeks in September, and then commence your attendance at your medical school.

You will have gained much knowledge, and will be proud of your work. Your digestion will be perfect,

your health good, and you will have cause for congratulation.

It is the purpose of this paper to outline for you principally how best to study the practice of medi-From the outline which I shall draw for you, and which, I may say, is not by any means entirely original, you can readily draw up suitable outlines for other studies, using your originality and knowledge in so doing. Purchase first a ream of good white or light yellow paper. The one sheet, practical legal, made by a few firms in the United States, I found answered best. This is but a matter of taste. Get some good, heavy-ruled writing-paper, sufficiently good, so that if you want to have it bound its appearance will be creditable.

Provide your room with two writing places: one that you can use sitting down, one that you can use standing up. Arrange to have good light at all hours of study. Then select your books, if you have not already done so. In my work I used Roberts's Practice of Medicine and Strümpell's Text-Book. I am prejudiced in favor of them. Certainly they are good enough. I would advise the student to follow Roberts and use Strümpell as a reference-book. Practice is a new candidate for favor, and it has good claims for high recognition.

Then, with an unabridged dictionary and a good medical dictionary, you are ready for your first lesson. It is a question with me if the student's medical dictionary has as yet made its appearance. We have wonderful dictionaries of medicine, Foster's and Billings's, the possession of which marks an epoch in the library of their purchaser. I am not now acquainted with the new dictionary of Professor Duane, but, from reviews which I have seen, I judge it to be the best dictionary now on the market for the medical student.

Having now your material, I ask you to memorize the following schedule in such manner that you can repeat it from any point, forward or backward. Get it impressed on your cerebral cells better than you have the alphabet, better than your notation. The use of this schedule is our "method of study."

```
1 DEFINITION.
2 SYNONYMS.
3 VARIETIES.
4 FREQUENCY.
5 MORBID ANATOMY.
     (a) Macroscopic.
           1 Number.
           2 Size.
           3 Shape.
           4 Appearance.
           5 Seat and Stage.
6 Secondary changes.
           7 Changes in other organs by system.
           8 Terminations.
     (b) Microscopic, after above system.
6 ETIOLOGY.
     (a) Predisposing causes :
           l Age.
           3 Climate.
           4 Seasons.
           5 Habita.
           6 Idiosyncrasies.
           7 Occupations.
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8 Hygienic surroundings.

10 Heredity.

(b) Exciting causes:
1 Dietetic.

11 Idiopathic.

2 Mechanical.

9 Other conditions, diseases, diathesis.

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3 Chemical.
           4 Heat, cold or wet.
          5 Specific.
7 SYMPTOMATOLOGY.
     (a) Period of incubation.
     (b) Prodromes.
     (c) Method of onset.
     (d) Symptoms:
          1 Countenance and general aspect.
          2 Nervous.
          3 Respiratory.
          4 Circulatory.
          5 Temperature.
          6 Digestive.
          7 Genito-urinary.
          8 Tegumentary.
9 Muscular and osseous.
         10 General nutrition.
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- 11 Physical examination: (a) Inspection. (b) Mensuration. (c) Palpation. (d) Percussion. (e) Auscultation. (f) Succussion.
- (g) Analysis. (e) Course. (f) Duration. (a) Termination. (h) Complications and sequelse.
- 8 PATHOLOGY. (a) Exact definition.
 - (b) Pathological explanation of prominent symptoms and signs. (c) Theories.
- 9 DIAGNOSIS.
 - (a) Diagnostic points. Use system given under symptomatology.
 - (b) Name all diseases to be diagnosticated from.
 - (c) Differences 1 Causal.
 - 2 Method of onset.
 - 3 Symptoms by system.
 - 4 Physical examination.
 - 5 Duration and course
 - 6 Methods of termination. 7 Complications and sequelse.
 - 8 Prevalence of epidemics.

10 PROGNOSIS.

- (a) Favorable or not -
 - 1 As to life.
 - 2 As to complete recovery.
 - (b) Favorable points.
 - (c) Unfavorable points.
 - (d) Average duration of the disease. (e) Statistics of mortality.

11 TREATMENT.

- (a) Expectant.
 (b) Hygienic.
- (c) Prophylactic.
- (d) Specific.
- (e) Symptomatic.
- (f) Supportive.
- (q) Surgical.
- (h) Psychical.

With this scheme, take up each independent disease and write out a full treatise, or a skeleton of the subject under consideration. It can be made very complete if enough time can be given it; very short, yet clear, if it is necessary that it must be abridged. Personally, I think a lengthy analysis is better. With this scheme you cannot lose a single point if you use care. It makes you study, it makes you think. Writing makes a careful and attentive man. That is what is needed in our study of medicine.

Let us say that your preceptor has assigned you, for the next lesson, typhoid fever. You consult your books, and work out a definition and write it down. You next take up the synonyms and write them down under their proper heading. If your books speak of any varieties, record them. In like manner, the schedule is followed until the subject has been exhausted. You cannot write under every sub-heading,

but under the eleven main subdivisions there is always something to be said.

After the paper is finished review it, and not the book, for your next recitation. You will find that the writing of the text alone has given you a clear knowledge of the disease, and that but little study is needed for you to recall, not only the essential, but the minor points of morbid anatomy, etiology, symptomatology, diagnosis, prognosis and treatment.

One can readily understand the value of the system, for the knowledge is impressed in so many different ways: by study, by writing, by recitation.

Then, when the weekly examination is given, you find yourself provided with a system which brings the work all back to you. You have simply to take your knowledge from each of the pegs with which the system provides you. Certainly it aids materially.

As I know from personal experience, the entire subject of medicine can be exhaustively taken up and completed from the 1st of June to the 10th of September.

The schedule is not only of use to you as a student, but in actual practice it can be used every day. What better system is needed for reviewing the symptoms of a patient than the one given under symptomatology? How can you omit any important investigation if you follow the system through a physical examination?

When medical students realize the benefit to be derived from system, they will quickly accept it. It is an idea of mine that the schedule which I have given you ought to be the subject of the first lectures of those who teach medicine in our medical colleges.

Clinical Department.

A CASE OF ACUTE YELLOW ATROPHY OF THE LIVER: A CASE OF RAPID SARCOM-ATOSIS.¹

BY F. C. SHATTUCK, M.D.

I. ACUTE YELLOW ATROPHY OF THE LIVER.

A WELL-DEVELOPED and nourished woman, apparently between twenty and thirty years of age, was admitted to the Massachusetts General Hospital, April 5, 1894. No history was obtained until after her death, as no friends accompanied her, and she was unconscious on admission, remaining so to the end.

She was deeply jaundiced; pulse 70; respiration 20, stertorous; temperature 97°; pupils equal, contracting or dilating on exposure to light. There was some rigidity of the arms, but no paralysis could be detected. Physical examination was otherwise negative, except that the liver dulness was very small and that the lower abdomen was occupied by a tumor corresponding to an impregnated uterus at the fifth or sixth month. No fetal heart or placental souffle could be heard, and there was no bluish discoloration at the introitus vaginæ. A probable diagnosis of acute yellow atrophy of the liver was made, and the catheter was used to get a specimen of urine which was submitted to Prof. E. S. Wood. This secretion showed only seventy-five per cent. of urea, a slight trace of albumin, with pigment; a little blood and renal epithelium free and on casts, a few hyaline and brown granular casts, an occasional epithelial cast. The

¹ Read before the Boston Society for Medical Improvement April 9, 1894.

cells were stained with bile and with bilirobin crystals. Leucin and tyrosin absent. The blood examination was negative. In one of four cultures made from the blood in glycerine agar before death a small growth of staphylococcus aureus occurred. In view of the negative results of the autopsy cultures this was doubtless due to contamination.

The coma became rather less deep for a time and the patient became very restless. But no marked change in the symptoms occurred until 9 P. M., April 6th, when tonic spasm began in the left leg, soon involving the whole body, and passing off with some clonic spasm of the left arm. Death at 10.40 P. M.

It was then learned that she had been married three and one-half years, had a child two years old, considered herself now six months pregnant, and was perfectly well until three weeks ago, when she noticed red spots on various parts of her body, disappearing in a few days. A week ago jaundice first appeared and rapidly deepened. She kept at work and was only "a little sick," until two days before entrance, when she became worse. April 4th she could "hardly speak from weakness," vomited several times, once a little blood, and gradually became unconscious, fully so at 11 P. M.

The great viscers were extracted through the rectum and submitted to Dr. Whitney, whose report is summarized as follows:

Lungs. - Negative.

Heart.— Extreme and universal fatty degeneration

shown by the microscope.

Liver.— Reduced at least one-half in volume, capsule not wrinkled, organ fairly firm, form symmetrical. The microscope showed that the liver cells in the centre of the lobules were entirely destroyed and those at the periphery filled with fat drops of varying size. Many of the cells were filled with minute fatty molecules. The region of the portal vessels was infiltrated with round cells, invading more or less extensively the lobules.

Spleen, large, firm, dark-red in color; the follicles not distinct.

Kidneys.— The microscope showed extensive fatty degeneration of the renal tubules.

Pathological Diagnosis.— Acute yellow atrophy of the liver with jaundice. Acute fatty degeneration of the heart and kidneys. Hyperplasia of the spleen. Glycerine agar cultures of the liver, spleen and kidneys.

neys were negative.

This is the first case of this rare affection which has come under my observation both clinically and pathologically. The course was rapid. The case was in most respects typical, and the only important diagnostic feature which was absent during life was the leucin and tyrosin in the urine. Out of fourteen cases Riess says they were absent only once. Their absence in the liver post mortem is also noteworthy. The necessity for a purely objective diagnosis added to the interest of the case. Advanced pregnancy in a young woman the condition of whose general nutrition showed that the process must have been of short duration, deep coma, intense icterus, the absence of fever, and negative results from physical examination, except for a marked diminution in the liver duluess — these points were sufficient to establish the diagnosis beyond reasonable doubt.

Tenderness in the hepatic region, even during coma, is spoken of as a common symptom. It was ab-

rigidity on palpation.

Incidentally I should like to call attention to the discrepancy between the urinary examination during life and the condition of the kidneys only thirty-six hours later. Although these organs were acutely fattily degenerated, the urinary sediment suggested nothing more than decided renal irritation or hyper-

II. RAPID SARCOMATOSIS.

T. S., thirty-six years of age, single, of negative family and previous history, and good habits, entered the Massachusetts Hospital March 6, 1894. He was well until two and one-half weeks before entrance, when he began to have pain in the back and malaise, his work - that of an insurance agent - requiring effort. Several days later he had a sharp pain like a stitch just to the left of the small of the back which made him scream, but soon passed off. Some malaise and pain in the back continued, but he kept at work. March 1st, after a sleighride, he had a chill lasting for ten minutes, not followed by sweating. The two next days he felt miserable, suffered from severe pain in the back and legs but went to business. At night at this time he had no pain. March 4th he thrashed round on the sofa all day on account of pain and nervousness and then sent for Dr. H. P. Jaques of Milton, where he lived. Morphine was given with relative relief to the pain but impairing the appetite and binding the bowels. The pain came in entire side and even when he was lying still.

When admitted to the hospital two days later, physical examination was negative except for tenderness in

the small of the back.

March 13th. Several small subcutaneous nodules were discovered over the lower sternum, movable, not tender. The next day others were found in the axillæ, back, front of chest, and over the right biceps. One of these was excised and examined by Dr. Whitney, who pronounced it sarcoma. The skin over some of the nodules was discolored by hemorrhage.

A blood count showed:

Red			•								• •
White				•	•	•	•	•	•	•	
Hemagl	obiı	D.	•	•		•	•	•			50%

The differential count of the white by Dr. R. C. Cabot was as follows:

Polymorphonuclear neutrophiles						70%
Lymphocytes					•	19
Large mononuclear in transition						3
Eosinophiles						1
Myelogytes and small mononucles	r ne	outro	phil	88		7

March 21st. Decided enlargement of the liver was made out but pain has disappeared and was absent afterwards. The breathing became labored and wheezy, with inspiratory retraction of the soft parts above and below the thorax. The spleen became pal-pable and April 7th he died. There was almost constant but irregular pyrexia throughout. The autopsy was by Dr. Whitney and may be abstracted as follows:

No nodules below waist line. Some in scalp, over clavicles, and scattered over chest, upper abdomen and back.

Masses, plates and nodules of new growth in mediastinum, heart, lungs, pleura, lower dorsal vertebræ extending into the spinal canal but not into the cord,

sent in this case and there was not even muscular nevs and adrenal bodies. The marrow of the femur was normal. Glycerine-agar cultures from the various organs were negative. This case ran its course in about six weeks from the first symptom, between four and five weeks from the time when a physician was first summoned. The first subcutaneous nodule was found between three and four weeks before death.

It seems probable that the disease started in or near the dorsal vertebra, where pain was first noticed, and thence rapidly spread. The blood examination was remarkable only for the chloranemia and the increase in the percentage of the myelocytes and small mononuclear neutrophiles.

AN IMPACTED GALL-STONE REMOVED BY OPENING THE COMMON DUCT, THE WOUND IN THE DUCT BEING CLOSED BY SUTURES.1

BY J. W. ELLIOT, M.D.

THE patient, a laundress, aged thirty-nine, had been subject to occasional bilious attacks for fifteen years. Ten years ago she had a very severe attack, and five years ago another. During the last two years they have become more frequent, so that in the last year she has had six or eight. In the last two months she has had an attack with vomiting almost every week. She has lost flesh and strength. Five days before I saw her she had an attack so severe that she left her work and went to bed. She had fever and chills and a severe pain in the right side and middle of abdomen. She thought she had not been jaundiced, and the bowels had moved.

She entered the Massachusetts General Hospital in the evening of February 1, 1893, with a temperature of about 102° and a pulse of 110. Dr. Fitz and I saw her soon after her arrival.

She had a moderate general icterus. The abdomen was full and tympanitic, except in right hyperchondrial region, where there was a pyriform tumor continuous with the liver-dulness, occupying nearly the whole of the right side of the abdomen, extending below the anterior superior spinous process. This was dull on percussion, fluctuating, with rounded borders, and moderately tender. The rest of the abdomen was not tender. The general condition of the patient was one of suffering and exhaustion and seemed to demand immediate relief.

The diagnosis was not made, as we were unable to get any of the above history owing to the patient's critical condition, and the jaundice was not noticed in the electric light.

Operation. — An incision was made above and to the right of the umbilicus over the most prominent part of the tumor. It was found to be a very much enlarged gall-bladder, which contained about three pints of bile and twenty gall-stones. Its contents being evacuated, the gall-bladder wall, which was much thickened, was stitched into the abdominal wound. No attempt was made to clear the ducts of stones, as the pulse had become rapid and weak during the operation.

The patient rallied well from the operation, and gradually improved; but a large amount of thick, tenacious bile continued to pour from the gall-bladder, and the stools remained white. The patient was still jaundiced, but less so. For the next two months the

omentum, mesentery and intestines, spleen, liver, kidSociety, March 7, 1894.

patient remained in poor condition. There was occasionally a rise in temperature and a chill. She had frequent attacks of pain and vomiting, which were relieved by a copious discharge of bile from the opening. The ducts were twice explored — once by Dr. Homans and by myself with a finger and a sound passed into the gall-bladder; but no stone could be detected.

On May 22d, the above-mentioned attacks continued; the stools were still white, and the patient was losing

flesh and looked poorly.

Operation. — The abdomen was opened just inside the sinus which remained where the gall-bladder had been stitched to the abdominal wall at the first oper-After the adhesions about the gall-bladder were cleared away, an examination of the duct was made with one finger in the gall-bladder and the other hand in the abdominal cavity. A large stone was finally found impacted in the common duct near the duodenum. It was found impossible to reach this by an instrument passed through the gall-bladder. The duodenum was in front and adherent to the common duct. The duct was dissected clear, and the region was packed with gauze. The duct was then incised, and a stone as large as a pigeon's egg extracted. Several smaller stones were found in a pocket in the duct near by. The finger was then easily passed back into the cystic and hepatic ducts. The incision in the duct was closed with silk sutures, and gauze was packed about this part of the duct and brought out through the abdominal wound. Two separate dressings were used, one for the operation wound and another for the sinus of the gall-bladder. The wound dressing was kept separate and dry by a collodion partition.

The patient did very well. The wound healed without trouble. The discharge from the gall-bladder soon lost its color of bile, and became a clear, thick,

tenacious fluid like glycerine.

On June 1st, there was much less discharge from the sinus, and the stools became yellow for the first time. During June and July the patient improved slowly. She often had attacks of pain in the back and side accompanied by nausea. At the suggestion of Drs. Cutter and Cabot, she took salicylate of soda with great benefit. In August she gained flesh and strength and went to Ireland in good health with a small sinus from the gall-bladder.

According to Murphy ² this operation has been done five times with two deaths, a mortality of forty per

cent

This is perhaps the most valuable procedure in gall-bladder surgery, as the common duct must be cleared. In difficult cases incision is less apt to injure the duct than the crushing or needling of a stone. Its hitherto high mortality is its only objection. This success leads me to hope that the mortality can be reduced.

AN OVARIAN CYST SIMULATING A STRAN-GULATED UMBILICAL HERNIA.

BY GEORGE G. HOPKINS, A.M., M.D., Surgeon to St. John's Hospital.

FLORA FADER, aged fifty-seven years, married, Scotch.

Admitted November 27, 1893, for a strangulated umbilical hernia. We were sent for immediately, supposing it to be an intestinal hernia.

² Medical Record, January 20, 1894.

We found a tumor protruding just below the umbilical opening. It was about the size of a walnut, and very dark—almost black. All aseptic precautions having been taken, ether was administered. Assisted by the house staff we proceeded to nick the strangulating band, guarding the tumor with a broad, flat director. The constriction being relieved the tumor at once disappeared; but to our surprise fluid began to discharge by the opening, but there being no odor, we felt sure that our first thought was wrong, that is, rupture of the intestine. We enlarged the opening to two inches, and serous and gelatinous matter began to discharge. Exploration with the fingers discovered that a tumor occupied a large portion of the abdominal space.

This tumor proved to be a multilocular gelatinous cyst of the right ovary, of an estimated weight of twenty five pounds. It was entirely free from adhesions. It was necessary to extend the incision seven inches in order to remove the tumor. The pedicle was secured with sterilized braided silk, cut short and dropped in the abdomen. The pedicle was treated with crystallized carbolic acid, after division. The toilet of the abdomen was made with great care. It was twice irrigated with Tiersch's solution. The wound was closed with deep sutures, including all the tissues. No drainage-tube was used.

This unpromising patient — an ambulance case — never had an unfavorable symptom. The temperature never reached 100° F. She was discharged from hospital December 28, 1893, cured.

Reports of Societies.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

C. L. SCUDDER, M.D., SECRETARY.

REGULAR meeting, Wednesday, March 7, 1894, Dr. Abner Post in the chair. Dr. Lund showed a

PORTABLE TRENDELENBERG TABLE.

Dr. W. T. COUNCILMAN showed two specimens illustrating

LESIONS OF THE INTESTINAL CANAL.

One of these comes from an officer in the late war. The case was as follows: This officer was shot in the right flank by a Minié-ball. The ball entered the right flank a little posterior to the lateral median line and about five centimetres above the crest of the ilium. The course of the ball was backward and a little downward and emerged from the back just posterior to the spine of the second lumbar vertebra. He lay on the field of battle all night. He was removed to a hospital and it was said that evidences of peritonitis appeared. He was supposed to have had a general peritonitis and fecal matter was discharged from the wound in the back. A short account of the history of the case is given in the Surgical Volume of the War of the Rebellion, in Part II, p. 78. The case was supposed to be one of remarkable recovery after gunshot wound perforating the colon. He was in the hospital for some time after that, and finally recovered. It was supposed that the colon had been perforated by the ball, and also that the ball had injured the spinal

column. The autopsy was made a short while ago. There was a cicatrix which was very slight in extent and scarcely visible at the point where the ball had entered, and a somewhat larger cicatrix on the other side where the ball had come out. Death was due to disease of the liver. There was no evidence of there having been any general peritonitis. The peritoneal cavity was entirely free from adhesions, and the entire peritoneum smooth. There was no evidence of any peritonitis of any very large extent about the colon. The injured portion of the colon was free; and at a point corresponding to the line of the passage of the ball, that is, about six or seven centimetres above the ilio-cecal valve in the ilium the gut was adherent over a considerable distance, that is, the line of attachment at that point was very much larger and thicker than at any other point. The tissue behind the bowel at that point was cicatricial, and the bowel was drawn in and adherent. On opening the intestine and examining carefully, there was no evidence of any double perforation of the bowel. The mucous membrane of the bowel was drawn in, and there was a slight puckered cicatrix just opposite the point where this cicatricial tissue is behind it. This is the only evidence of any cicatrix in the bowel till just at that point; and it would seem to be quite evident that there had been no general peritonitis at the time, that the ball had not passed through the colon at all, that it had entered the peritoneal cavity for but a very short distance, had passed probably in close proximity to the colon, probably touching it but not perforating it, and then gone on. It is possible that the necrosis might have been produced from the touching of the gut by the nal secretion in cases of gonorrhea and cases of ball, or it is possible that a perforation may have taken syphilis. That has been supposed to flow down from place afterwards. That is not the sort of perforation the vagina and into the rectum and produce inflammaof the colon which would be made by a ball at all, so that the case would have been really peculiar if the individual had died.

The next specimen which I have is one of rather more interest, I think, than that. This is one of the interesting specimens of simple stricture of the rectum. This case is one which is from the City Hospital. The history of the case has no especial bearing on this point. It was known that she had a stricture. was in the hospital some little time, was quite ill when she came into the hospital, and died of peritonitis. At the autopsy there was a general peritonitis found pus in the upper cavity everywhere; and, as the cause of the peritonitis, a perforation of the gut immediately above the stricture was found. The perforation had in any other class; and one of the causes which has apparently first taken place into an abscess, or at least rectum, and that opened into the general peritoneal cavity with general peritonitis as a result. There was no history of syphilis in this case, and the patient was a respectable married woman, and I think she had had children. The most peculiar point about these strictures is the density of the tissue which is around them. On examining the specimen further, it is seen that in the stricture itself there are some ulcers and one ulcer which we have here. You see a large, fistulous passage behind the rectum, into which the probe passes some distance and communicates with this second stricture; and this abscess in which I have the probe now passes readily into the intestine at that point; so that this large abscess behind the rectum communicates with the rectum at two points - here just in the middle of moval of an impacted gall-stone. the stricture, and above through an opening at the | 1 See page 83 of the Journal.

base of the ulcer, so that this large abscess here communicates at two points. These strictures of the rectum are, I think, exceedingly interesting. One of the most marked things about them is this enormous mass of cicatricial tissue behind the rectum, which fills up the hollow of the sacrum. It is composed of the densest sort of cicatricial tissue mixed with masses of fat. It is so hard that it cuts almost like cartilage. It is with the greatest difficulty that one can remove such a rectum as this from the body at the autopsy.

The etiology of these strictures seems to be a perfectly obscure point. There is really little or nothing known about the etiology. There has always been a tendency to regard them as syphilitic in character, but there is not a great deal of evidence in favor of this. The most extensive article on this subject appeared in Virchow's Archives about a year and a half ago, by a writer who had gone over very carefully almost the entire literature on stricture of the rectum. He found 217 cases of it reported in all. He also reviewed the evidence in favor of syphilis when syphilis was given as a cause, and he concluded that the evidence of syphilis was greatly overrated. There is one thing which is somewhat opposed to regarding them as syphilitic, and that is the enormous frequency of them in women as compared to men. Of his 217 cases he found 170 cases were in women, and only 25 in men, and two of the cases were in children. Of course, if the thing is syphilitic in origin, there is no more reason why females should be affected than males. Then he reviews also another point which has frequently been given as a cause, and that is the influence of the vagition and lead to stricture in that way; and he denies the possibility that the vaginal discharge can pass through the perfectly intact and constricted sphincter of the rectum. He found in some of the cases that there were fistulæ between the rectum and the vagina; and he thinks that these fistulous openings may have had something to do with it, but he is very uncertain. He also reviews the result of treatment in all sorts of ways - by surgical interference and by antisyphilitics; and the result of antisyphilitic treatment does not seem to throw very much light on the subject. The whole question seems to be an extremely obscure one. Another point which he made out was the very great frequency in prostitutes, far more common in them than been assigned to it is coitus through the anus, but he an abscess was first formed between the uterus and the found that had been the case in only three of the cases.

Dr. Fitz: I do not understand how Dr. Councilman eliminates the possibility of a nick in the surface of the colon at the time of the passage of the bullet. He does not consider that there had been a perforation, and yet feces were discharged through the wound.

Dr. Councilman: Feces were discharged after two or three days; and I thought the colon had not been wounded at the passage of the ball, because there was no evidence of anything like general peritonitis, and almost certainly there would have been if the colon had been actually perforated by the ball.

THE SURGERY OF THE GALL-BLADDER.1

Dr. J. W. Elliot read a paper describing the re-



DR. FITZ: What I have to say does not so much relate to the operation for removal of gall-stones as to call attention to the importance of considering the medical side of this subject in contradistinction to the surgical. In the first place, the conspicuous symptoms of gall-stones may be present, especially the jaundice, pain and febrile disturbance, perhaps coming on suddealy and so urgent as apparently to demand operation. An operation is done, and nothing found. I have in mind a case I saw with Dr. Mixter, in which this grouping of symptoms existed, and in which it was felt that, in consequence of the suffering, the loss of flesh and strength, and the apparent lack of benefit resulting from treatment, an exploratory operation was desirable. Gall-stones were not found. Such cases illustrate the desirability of trying medical treatment in the first instance for these symptoms, without having recourse to so serious an operation as exploration of the gall-bladder. I have in mind other cases in which the symptoms were severe, but in which relief resulted from morphia and from the use of sweet oil or of salicylate of soda - these remedies being employed for a period of months and being followed by a practical relief from the severe attacks and from the jaundice.

The other set of cases, which also makes clear to my mind that medical treatment is to be employed in the first instance, or at all events that surgical treatment may not be immediately called for, comprises those in which gall-stones exist without any symptoms whatsoever. It is a frequent occurrence at post-mortem examinations to find one or more gall-stones in the gall-bladder, especially of elderly people, which had existed without symptoms. These may be associated with thickening of the wall and adhesions about the gall-bladder, producing so little disturbance that the friends had forgotten its existence. In short, gall-stones occur without producing any special disturbance; and where they produce slight disturbances, the patient recovers from the latter under medical treatment.

With reference to the operation, each case, of course, has to be considered by itself; and it seems to me particularly important that perhaps most of the operations on the gall-bladder and gall-ducts are to be regarded in the first instance as exploratory. The inference from the symptoms is that an obstruction exists; the probability is that the obstructive jaundice is due to gall-stones. The surgeon should state to the friends of the patient that the operation is at the outset exploratory. That the operation is exploratory is illustrated by the case just mentioned. It is also illustrated by the fact that gall-stones in elderly people are infrequently associated with malignant disease; hence, that the removal of the calculi has no permanent beneficial result. Furthermore, it seems to me advisable to bear in mind that, although the operation may relieve the patient of the sufferings which have existed a longer or shorter time, it presents no immunity from future disturbance. This point was recently illustrated in one of the cases which I have had in the hospital during the past winter. The patient some four or five years ago was operated on by Dr. Polk, of New York, for a gall-stone said to have been in the common duct. It was removed; and she had immunity from further disturbance until within a few months. Then the vomiting recurred; there was a slight degree of jaundice; and, within a few days before entrance

to the hospital, pain in the region of the liver. The local symptoms suggestive of gall-stone disappeared, but there was persistent elevation of temperature, which suggested some inflammatory process as a complication. During the course of these symptoms the scar reopened, but closed in a day or two. Then a certain degree of pain and a considerable area of dulness appeared in the left hypochondrium. rence of these symptoms, in addition to a slight cough, lead me to suspect the existence of some localized inflammatory process, and I aspirated the chest. There was withdrawn about half a pint of clear fluid, in which there were large cells apparently from the pleura. This gave a temporary relief to the condition, but the elevation of temperature continued. I hesitated at puncturing the diaphragm, with the lack of satisfactory evidence that there was pus beneath it; but, in the course of a short time, a small amount of pus suddenly escaped from the bronchi, and it seemed to me probable that a small subphrenic abscess had been evacuated through this outlet. The case illustrates the last point, that, even after removal of gall-stones, the prognosis of the operation is one which is necessarily limited to the immediate conditions, and does not secure an immunity from future disease.

DR. CABOT: The operations I have had upon the gall-bladder and the gall-ducts have been of various degrees of severity and for the correction of various pathological conditions. In the first place, I have had several in which the pathological lesions were confined apparently to the gall-bladder, where the stones had set up an inflammation of the gall-bladder, and the inflammation was the cause of the patient's serious symptoms. In one case the gall-bladder was quite large; in the others small, and contracted upon the stones. In those cases the operation was easy; the gall-bladder was opened and the stones pretty easily dislodged and removed. In one of my cases I remember that the symptoms were such as Dr. Elliot has spoken of as being confounded with malaria - that is, there were many chills, which were recognized as due to the inflammation in the gall-bladder by the physician in attendance; but he was very sure there must be an abscess in or around the gall-bladder to account for their frequent occurrence. In that case I found the gall-bladder filled with glairy mucus, but no pus. It contained several stones, one of which was impacted just before the junction of the cystic and hepatic ducts. The duct was so narrowed between the gall-bladder and the stone that I could not sufficiently dilate it to remove the stone through the gall-bladder; I incised the duct, removed the stone, and then, putting a drainage-tube into the duct, closed the wound in the gallbladder. The case recovered perfectly.

I have had two or three cases in which the impaction of the stone has taken place apparently at the junction of the two ducts; and these have been reached with tolerable ease, and removed with good results. In one case a stone was in the hepatic duct; it was broken in attempts to seize it. The hepatic duct was very much dilated and the stone could be just felt with the finger, but the forceps could not be easily manipulated in the space offered. Finally, on seizing it, it broke and was partially removed. The symptoms were relieved, and the patient made a good recovery.

The cases in which the operation is really difficult

— and I think it is about the most difficult operation

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that I have ever done — are those in which the impaction has taken place in the common duct pretty close to the duodenum. I think I have had five of these cases. In one of them I operated by incising the duct with the knife. I found it exceedingly difficult to carry the knife down to the proper point without injuring the parts about. There was a good deal of tympanites, the abdomen was distended and the coils of intestine got in the way. The stone was removed but the patient, who had been sick a long time, did not recover. In consequence of the difficulties met with in this operation I had a hook made which I have shown to this Society, and have used several times with a great deal of satisfaction. It is a cutting hook at right-angles to the staff, and blunt-pointed so that there is no danger of injuring coils of intestine or catching in them as you carry it down to the point where you wish to make incision. With the stone fixed under the finger, it is not difficult to carry this hook below the bulb of the forefinger, turn it over so that the blunt-point is directed towards the calculus, and work it gradually through the wall of the duct until it comes in contact with the stone; then, drawing upon the hook, the wall of the duct is incised, and the stone is uncovered. I have in two cases found it possible to operate in this way at a great depth, and have thus removed stones with fortunate results. In the last case that I operated upon for stone impacted in this region, the duodenum so overlay the duct, and the adhesions were so firm in that neighborhood, that I could not feel sure of really getting my finger down upon it. It was a case where I had to operate rather rapidly as the patient was not in good condition. In that case I needled the calculus, running the needle through it several times and breaking it up thoroughly. The patient did very well after the operation, and the icterus cleared up. He then had a return of the jaundice to a certain degree, but not as severe as before, and not accompanied by the pain he had had in the attack during which I operated. The patient is well and about; but I think he still has trouble in that region. Whether that trouble is due to the fact that some part of the calculus was still too large to pass the duct, but allows some of the bile to escape past it, or whether it is due to irritation of the duct having set up cholangitis in the liver, or possibly due to a stricture perhaps caused by the long presence of the calculus at one point, I do not know. Certainly the immediate recovery was very gratifying, as he could not have long survived the condition that existed before the operation. I have seen one case in which, on account of hepatic colic, an operation was advised but refused. The patient subsequently died of pancreatitis due to irritation of the impacted stone. I have also heard of one other similar case.

I think the statistics of recoveries, where the operation is done by skilled hands, is probably somewhat better than Dr. Elliot has collected. The period during which these statistics were collected, was one in which we were all learning. I think we can now do somewhat better, and the necessary dangers of the operation are not as great as those statistics would show. The success of the cases which are done early, done before the stones are firmly impacted in the ducts, is very much greater than the success of the operations done after such impaction has occurred; I think that years had had repeated attacks of jaundice, with pain fact ought to weigh considerably against the plea and inability to work. In the last two or three years, for delay and medical treatment made by Dr. Fitz. every two or three months attacks had recurred; and

If the diagnosis is clearly made, if the patient has had a number of attacks of jaundice with pain in the hepatic region, perhaps we ought to be a little readier to operate from the fact that finally so many come to operation, and come perhaps in a less good condition

than if operated on after but few attacks.

Dr. Conant: I have seen five cases of trouble with the gall-bladder. The first one I saw I thought to be a case of malignant disease of the cecum; and although I considered the subject of gall-stones, it was ruled out because of lack of symptoms. The woman presented the symptoms of some malignant disease causing pain and constipation, and the family were told that probably operation would do very little, if any, good. She lingered along under morphine and medical treatment, and finally died; and there were 180 stones taken out of a dilated gall-bladder. I think if that case had been operated on she would have been saved much suffering, and it probably would have prolonged her life.

I have seen one other case similar to that; and the diagnosis was made of probable malignant disease of the cecum, although with that other case in mind the possibility of gall-stones was considered and an exploratory operation done. The woman was nearly of the same age, and presented almost the same symptoms (constipation and pain); she had a mass in the right iliac fossa, and no jaundice whatever. A large gallbladder was found, which held nearly a cupful of fluid; and on opening the gall-bladder, three large stones were removed. She did uninterruptedly well.

Another case occurred in a much younger woman. In this case pain, no jaundice, and the mass was in the right iliac fossa. The diagnosis was between a very long-pedicled ovarian cyst and gall-bladder. On cutting down upon it, it was found to be the gall-bladder, and two large stones were removed.

Another case was thought to be gall-stone somewhere along the track of the duct. The patient was under medical treatment some time at the Massachusetts General Hospital, and finally was referred to the surgical side for operation. I think it was the most severe case I have ever seen operated on. Not only were the small intestines glued down with the cecum, but the cecum glued to the ascending colon; and the whole of the cystic bladder, as well as the liver, was so obscure that it was almost impossible to get any opportunity at all to follow along down. It took considerable time to find anything that looked or felt like the gall-bladder. It was very much shrunken; and on going into it, nothing was found in the bladder. But on going farther down, at the junction of the two ducts we found a round stone which completely blocked the duct; and this woman presented the most complete case of jaundice I have ever seen. This after some difficulty was removed, and found to be many-facetted —almost so many-sided that they pointed up like little spiculæ, and the amount of induration of the ducts was very considerable indeed. This was removed. No attempt was made to bring the gall-bladder up; and therefore this tract of some two or three inches was thoroughly packed as far as possible. The ordinary methods of drainage were used, and the patient finally recovered.

The last case, I think, was a case which for twelve

having tried medical treatment thoroughly, she wanted something done. In this case we found only a small bladder, and on opening it found two stones about as large as your thumb. They were removed; and I did in this case a thing I think Dr. Richardson did before me. I sewed up the gall-bladder by Lembert suture, dropped it back into the abdomen, and sewed up the abdomen tight. She never had a temperature above 99°.

My experience is very limited, and I have not seen any of these severe cases barring that one case. The operations have been simple, almost no temperature, and the result uniformly good. The four cases on which I have operated have recovered without a symptom.

DR. GAY: I wish to say a word upon the absence of symptoms. I have operated twice in two years in cases in which there was no symptom previous to a week before the operation. The first case was in a blacksmith, who had been well until four days before I saw him. Then he was taken with moderate pain in the bowels, vomiting and chills. Dr. Goss asked me to see him, with a view to deciding what the cause was, and doing an operation if necessary. He had a moderately distended belly, tender over the gallbladder, and an indistinct tumor. Whether this was the gall-bladder or high appendicitis, I was unable to decide. We etherized and opened the abdominal cavity, and found it was the gall-bladder. These two stones were removed. This man was fifty-eight, perfectly well until four days before the operation. It is a year and a half since the operation, and he is all right now.

About six weeks ago I saw a man who had never had any distinctive symptoms of gall-stones, and had only been sick about three or four days. He had a tumor in the region of the gall-bladder, moderately tender, and which had given pain enough to get the doctor up the night before I saw him to relieve the distress. He relieved it without morphine. He was tender; there was moderate fever, moderate pain. An operation was done; the gall-bladder was opened and thirty-five gall-stones taken out. It required a good deal of work, because the gall-bladder was long and narrow, and it all had to be done by fishing them out, one at a time, with forceps. By running the finger down outside I could feel a row of stones in the duct. I realized that it would be a good deal of an operation to open the duct and clean out the stones. I could not squeeze them up into the gall-bladder. I sewed the gall-bladder in the wound and let him alone. In the first ten days he discharged seven gall-stones. I felt two more in the duct. Under ether, these two were squeezed into the gall-bladder, and were taken out without any trouble. I think the fact that the gallducts were able to empty themselves after a free opening was made above was curious. These stones had never produced stoppage; there never had been jaundice, and he never had colic.

The obscurity of the symptoms is the one point to which I wish to draw attention. The presence of stones may be only accidentally discovered at the autopsy, as every one knows.

DR. RICHARDSON: I am very glad to hear the details of this case of Dr. Elliot's, because I examined the patient with Dr. Homans, and it seemed to me that the diagnosis was very obscure, as it is in all cases of jaundice. I believe this is the only case in this com-

munity in which the duct has been sewed up. mortality surprises me. I had no idea that opening a large gall-bladder had any such mortality as 15 per cent., because it is the simplest operation in the world; and if the patient is in good condition, I believe in the future there will be no such mortality as that. In speaking of the prognosis in these cases, we must bear in mind the fact that the diagnosis in many of them is obscure. Malignant disease is often associated, even if we do not discover it at the time of the operation. Again, patients are brought to consideration of operation only after most prolonged and exhausting cholemia. A simple exploration under such conditions is often fatal. I think my mortality has been larger in simple explorations where nothing whatever has been done than in the cases of cholecystotomy. It is not fair in making up the mortality returns of operations on the gall-bladder and ducts to bring in, as Dr. Cabot has said, these cases in which the operation was performed as a forlorn hope. Of course, it is not fair to suppress fatal cases or to make our record better than it ought to be by a process of eliminating, for one reason or another, fatal cases. We ought to divide these cases into two or three groups: first, those in which the patient's condition is good; second, those cases in which the gall-bladder can be manipulated without contaminating the peritoneum by bile, which may be septic; and, third, those cases in which the patients are so exhausted that from the simplest operation, even from etherization, there is a large mortality. There are certain dangers which I have seen which cannot be avoided by any care whatever on the part of the surgeon; one is the danger of hemorrhage. The one death from hemorrhage was, I suppose, my case. That danger is always present to a certain degree in cases of cholemia. I had never had any hemorrhage, and was beginning to think that that was a false danger; but a persistent capillary hemorrhage in a case in which no vessels had been cut, no ligatures placed, destroyed a patient in spite of everything to prevent it. Another danger is that of peritonitis, and that is always present in cases of contracted gall-bladder. My experience seems to be much more unfavorable than that of other gentlemen, because in a large proportion of the cases the gall-bladder is contracted down so that it is impossible to remove the stone without a very extensive infection. We cannot tell whether the bile is infectious or not by the general appearance; but I have found recently that the organisms of the bile are very rapidly growing and virulent. If we happen to have such a case, of course we have a contamination and peritonitis, although I have not had any case of general peritonitis associated with these operations. I have been very much interested in the question of opening the duct for several reasons; most important is the surgical anatomy of the common duct. We know very little about the relations of the common duct with the portal vein and hepatic artery. It seems to me that knives must be used with the greatest care about the duct. The further you go from the duodenum the less danger, because the portal vein is removed by a very considerable interval from the lower portion of the duct. Unless there are very strong adhesions the duodenum can be very easily turned aside by careful dissection of the normal peritoneum, or if there are extensive adhesions, even then by careful dissection you can turn back the duodenum and get where you can work with comparative ease and safety.

the insufficiency of operations upon the gall-bladder, unless you explore with the hand. Of course, every case of jaundice associated with gall-stones means impaction in the hepatic or common duct; and we can open the gall-bladder and take out all the gall-stones from it without reaching the stone that is doing the damage at all. I think it is very difficult, even with the whole hand in the abdomen, to be sure you have got all the gall-stones out. Until you have explored from the fissure of the liver to the opening behind the duodenum, you are not sure that you have removed the stone. I do not think it is necessary to close the duct, if this procedure is going to add much to the length of the operation, or if the difficulties of applying the needle are very great, because by capillary drainage we can leave the duct in apposition, and it will close just as an urethra closes after perineal section. I have seen that a number of times. In almost all instances in which the gall-bladder is contracted, and when I have tried to get at the stone by dilating the cystic duct, the whole thing is torn down either into the cystic ductor the common duct. The trying cases four hours. An interesting point is the very small have been those with full gall-bladder.

I was interested in Dr. Conant's cases because I made the mistake of advising against operation, having made the diagnosis of malignant disease; but the patient insisted on operation, and we found trouble in the gall-bladder. Dr. Gay spoke of the diagnosis between gall-bladder and appendicitis. Dr. Mumford and I operated the other day on a strong young man in whom the symptoms of appendicitis were marked. I found a thickened appendix which gave to the sense of touch the feeling of a recent swollen appendix, carried the incision downwards, and found an old adhesion which could not have been dissected out, nothing to do with the case. We found the gall-bladder dilated; opened the gall-bladder, and found it crammed with the colon bacillus; drained it; and the patient is now well. That case shows that the bile may be very septic indeed. We therefore must not get the confidence which I had acquired of the innocuous nature of the bile; but we must regard all cases of extravasation as possibly the source of fatal peritonitis. I feel with Dr. Cabot that as we increase our experience the mortality will diminish. My mortality since reading last spring has been very much worse than before. They have been cases of malignant disease, all patients in extremis. One case was of such advanced weakness that the patient died of inanition in two days. I have had some very gratifying cases.

Dr. MIXTER: Dr. Fitz referred to a case he saw with me — the first case, I think, in which I did exploratory operation on the gall-bladder. There had been repeated attacks, and apparently an abscess. On opening the abdomen we could find only a single band, which represented the obliterated gall-bladder. The patient recovered. The paper being on the subject of removal of stone from the common duct and suture of the duct, I will show these stones from a case in which that was done. An interesting point about the case is that it had been seen by several physicians, and a diagnosis of malignant disease of the liver made; and that seemed the most probable diagnosis. She was very anxious to have an operation done; and I did an exploratory laparotomy, and found an enlarged gall-

That leads me to make one other remark, and that is opening did not close; and three months later I opened the abdomen in the median line, having failed to find anything in the dilated opening into the gall-bladder, and then I found an enlarged duct, and this stone. The duct was opened and sewed up. The patient recovered promptly, and the opening in the duct healed. Here is a bottle filled with stones that I removed in a case — an acute attack where the gall-bladder was very much dilated. The case was in a large, strong man who had had several previous attacks, and had passed quite a number of guil-stones. This attack was attended with considerable temperature and a great deal of pain and distention. The gall-bladder held at least a quart, was necrotic, and there was an abscess formed already outside the wall. There are 500 of these, I think; and there is that small bottleful in addition. The removal of the stones was difficult from their great number. The gall-bladder was filled with pus. The cases I have seen that were fatal cases have been those where the operation was delayed too long. In one case where I removed a number of stones, the patient had been practically under ether for twentyopening that is necessary for the bile to be discharged through. In this case where I removed the stone from the duct, it admitted only a fine probe.

Dr. Elliot: I forgot to mention that the number of the cases in the list permanently cured, as put down by Murphy, is 51 per cent. of patients operated on. That seems to me very small. I agree with Dr. Cabot and Dr. Richardson that the mortality from obstruction from cancer of the pancreas, etc., should not be confounded with the mortality where stones are removed, and I carefully separated the two. My impression is that the mortality will always be high. certainly is a simple thing to open the gall-bladder and get out a few stones; but when it comes to these deep operations Dr. Cabot speaks of, and the cases where the gall-bladder is contracted, there must be a high mortality. Dr. Thornton described an operation where he opened the common duct, which was so deep that he could not see or feel anything. He therefore put in a Ferguson speculum to see the duct; got the stone out, and sewed up the duct. In many of these cases that have died the autopsy reports have shown kidney and lung trouble. I am sure that we shall always meet many feeble and unsound subjects.

Dr. Firz: I think if there is evidence of an impacted stone, the only thing to do is to get it out, even if the symptoms may recur. As to opening the duct, it seems to me that this operation is to be done more and more. Prolonged or rough handling of the duct is dangerous. Overstretching or tearing of the common duct is to be avoided, since sloughing or perforation of the duct is a very serious matter.

With reference to the relation between gall-stones and pancreatitis, this has occurred in a number of cases; and the most plausible explanation seems to be that the associated inflammation of the gall-duct has been extended into the pancreatic duct.

With reference to medical treatment, the point I intended to make was not that medical treatment should be carried on indefinitely, but that it should be tried in the first instance. If the symptoms persist, then is the time for surgical treatment. The gallducts are more likely to be found dilated if there have bladder, and took out the six stones which are in this been previous attacks of gall-stones; and it is usually bottle. She rallied well from the operation. The easier to remove the stone, after the ducts have been dilated, especially when it is in the common duct, than in those cases in which the cystic duct is so narrow that it is impossible to pass a probe through it.

I did not intend to have it understood that the fact that gall-stones might recur should indicate that operation should not be done. On the contrary, the point is that as the operation is to be considered in the first instance as exploratory, the patient should not be guaranteed against subsequent attacks of gall-stones. Of course, there is every reason why the stone should be removed if the symptoms continue.

Recent Literature.

Abnormal Man, being Essays on Education and Crime and related Subjects, with Digests of Literature and a Bibliography. By ARTHUR MACDONALD, Specialist in the Bureau of Education. 8vo, pp. 445. Bureau of Education, Circular of Information, No. 4. Washington: Government Printing Office. 1893.

Much of the work in this volume is a compilation of brief summaries of many of the chief monographs and articles that have appeared on the various subjects in recent years. The different chapters treat of education and crime, criminology, criminal sociology, alcoholism, insanity and genius, sociological, ethical and charitological literature, and a report of the twentyfirst meeting of the National Prison Association. the value and importance of such a compilation, there can be no question, and Dr. MacDonald's own work has enabled him to add much in the way of personal views, which are often of more value than the views of the authors quoted. Abstracts are given of many articles which are accessible to but few writers, so that the work will prove of great use to all interested in the subjects. Unfortunately the later chapters show signs of haste. More than half of the book is made up of a bibliography of the various subjects, which is the most full and complete of which we have any knowledge, and which must prove indispensable for every student.

Clinical Diagnosis. By ALBERT ABRAMS, M.D. (Heidelberg). Third edition, revised and enlarged. Illustrated. New York: E. B. Treat. 1894.

The subject of clinical diagnosis is well supplied with books and outlines and the present volume has no advantages which are at all apparent. Much of the material is put in the form of comparative tables and so briefly as to enhance that most dangerous method of differentiation. The illustrations and press work are poor.

Essentials of Physics, Arranged in the Form of Questions and Answers, Prepared especially for Students of Medicine. By FRED J. BROCKWAY, M.D. Second edition, revised, with one hundred and fifty-five illustrations. Philadelphia: W. B. Saunders. 1894.

That this book has reached a second edition is evidence that it has found a place among medical students who attain their knowledge "cross lots." Like others of this series the book is well printed and liberally illustrated, but it is hard to believe that a lasting understanding of physical principles can be obtained from such catechisms.

The Physiology of Death from Traumatic Fever. A Study of Abdominal Surgery. By JOHN D. MALCOLM, M.B., C.M., Fellow of the Royal College of Surgeons in Edinburgh, etc. Surgeon to the Samaritan Free Hospital. London: J. & A. Churchill. 1898.

This interesting little book is more in the form of an essay than an account of personal experience. The author is undoubtedly a thoughtful student, and differs in his ideas on this subject from those generally accepted. He considers that traumatic fever is traceable to sources other than sepsis, although he believes that the poison emphasizes the fever. He believes that peripheral irritation is the cause of changes in the blood-vessels, which he assigns as the cause of the fever. He sustains his position in an admirable manner, and the book is worth reading by all surgeons.

A Manual of Minor Surgery and Bandaging, for the Use of House-Surgeons, Dressers and Junior Practitioners. By Christopher Heath, F.R.C.S. Surgeon to University College Hospital and Holme Professor of Clinical Surgery in University College, London; Member of the Council of the Royal College of Surgeons of England. Philadelphia: P. Blakiston, Son & Co. 1894.

This is the tenth edition of this well-known little book, and while the author has "endeavored to embody the latest teachings as regards antiseptics," we cannot believe that he has succeeded. In many ways this little work is of great value, yet it signally fails in that one important point which should be introduced into all technical books; namely, a thorough attention to detail.

The After-Treatment of Cases of Abdominal Section.

By Christopher Martin, M.B. (Edin.), F.R.C.S. (Eng.), Surgeon to the Birmingham and Midland Hospital for Women. London: Simpkin, Marshall, Hamilton, Kent & Co., Limited. Birmingham: Cornish Brothers. 1894.

The author has had under his care over one thousand abdominal sections. A great deal of his experience has been gained from an intimate association with Mr. Tait, but he differs from Mr. Tait on several important points. The work, although small, is filled with practical points, and is one that any abdominal surgeon can read with benefit. Its value would be added to by a well-prepared index.

A Clinical Text-Book of Medical Diagnosis for Physicians and Students. Based on the Most Recent Methods of Examination. By OSWALD VIERORDT, M.D., Professor of Medicine at the University of Heidelberg. Authorized Translation, with additions. By Francis H. Stuart, A.M., M.D., etc. Third revised edition. 178 illustrations. Philadelphia: W. B. Saunders. 1894.

We have already noticed previous editions of this book, and can cordially extend the same praise to this, the third edition. The fact that the work has passed through three editions in so short a time, and is published in the German, English, Russian, Italian and Spanish languages, is additional proof of the general and critical appreciation of its merits.

Last year Baron Hirsch gave from his turf winnings to selected charities £42,000, and this year he has just donated to the various hospitals of London £15,000.

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THE HARM DONE BY CERTAIN LOCAL MODES OF TREATMENT IN DIPHTHERIA: TREAT-MENT OF NASAL DIPHTHERIA.

UNDER the head of "Non Nocere," Dr. Abram Jacobi, at the Eleventh International Medical Congress of Rome, Italy, called attention to the danger on the part of physicians of too much officious interference in the local treatment of diphtheria.

It is true, he says, that when the diphtheritic pseudomembrane is within reach, it ought to be either destroyed or disinfected. But we must not forget, first, that only a small part of the pharynx is directly accessible to such treatment, and that it is only one class of patients that can be subjected to it. In order to be effective, the application must be thorough. None but adults or large children, and of them but a small number, will submit to opening their mouths and having applications made. Smaller children will object, will defend themselves, will struggle. It takes much time to force open the mouth; meanwhile the patient is in excitement and perspiration, screams, and fights, and exhausts his strength. If the physician succeeds in forcing the jaws, the attempt to swab, to scratch off the pseudo membrane, and to cauterize will be very difficult, as the struggling child will prevent the physician from limiting his application to the diseased surface. By injuring the neighboring epithelium, the extension of the morbid process will be favored. No application can do as much good as the struggling of the frightened child proves destructive. Dr. Jacobi has seen children die in defending themselves against the attempted violence, leaving doctor and nurse victorious on the battle-field. He calls attention to the fact that what physicians can reach with their instruments is but very little besides the tonsil, and the tonsils are not very apt to favor the invasion of general sepsis. Why then insist upon those cruel and brutal exertions, most of which are discovered or devised by men possessed of a schematic knowledge of a pathological process "which leads them to kill their patients while trying to destroy a bacillus? Le sujet est mort, mais il est mort quéri."

Dr. Jacobi insists on the fact so often forgotten that diphtheria, not to speak of the larynx, is mostly and almost exclusively dangerous when located in the nose and naso-pharvnx. When the blood-vessels ooze slightly, the toxine may be immediately absorbed into the blood. The pseudo-membranes swarm with bacilli and toxine and lead to immense tumefaction between the ears and clavicles, to the formation of multiple abscesses, to hemorrhages, and to sepsis. these forms of nasal diphtheria require immediate persistent and efficient local treatment, for every case of nasal diphtheria has a tendency to terminate fatally. Every procrastination is a death sentence. The local treatment is to consist in cleansing and disinfecting. In the bad cases in which the nares are clogged with pseudo membrane, the cleansing and disinfecting is to be preceded by forcing a passage through the nares with a probe covered with wadding and dipped in carbolic acid. Particularly is this indication urgent when there is sopor. In making local applications, it is important that they should be made often, every half, one, or two hours, and that the whole of the diseased surface should be touched. Ointments are not available in the average cases, where the whole nasopharynx is the seat of the affection. The atomizer will seldom carry a sufficient amount of liquid into the cavities to be of much use. A spoon or small feedingcup, the nozzle of which is narrow enough to enter the nose, will do fairly well, and will allow the introduction of liquids into the nares in small or large amounts, all of which will enter the throat and be either swallowed or flow out of the mouth. The irrigator is liable by undue pressure to injure the ear. Dr. Jacobi prefers a small glass syringe with a conical nozzle of soft rubber. It will close up the nostril, the pressure can always be well measured and modified, and it is effective. The injections must be made in the recumbent or semi-recumbent position, frequently. On no condition must a child be taken out of bed for the purpose of having the nares washed and disinfected, the heart being seriously weakened in these bad cases.

In connection with this subject, Dr. Jacobi again emphasizes the danger of large doses of potassic chlorate in diphtheria. Several cases of fatal poisoning are on record, and he has himself seen a number of such cases. This remedy has been too much vaunted for all kinds of sore throats. Both nephritis and methemoglobinuria have been the effect of its administration.

In curious contrast to the views and practice of the above writer is the method of an eminent German authority, F. Bloebaum, who heroically employs the galvano-cautery, though "only when the disease is confined to the tonsils, the soft palate, the uvula, and the posterior pharyngeal wall." The false membrane, he says, is thus burnt off and does not form again.

1 Deutsche Medizinal-Zeitung, Berlin.

"This treatment should be employed in the beginning, before systemic infection has occurred." According to this author, red-hot iron is a concentrated antiseptic whose action is strictly limited to the diseased parts; it destroys the microbe and the focus of infection and excites a regenerative process. Goris 2 also approves of this treatment which he has used "in three cases of mild diphtheria." There was no reproduction of the false membrane, and no constitutional infection.

This mode of treatment as well as the cauterization and forcible ablative method of Gaucher, of Paris, is not likely to be extensively adopted for reasons well stated by Dr. Jacobi.

THE HEALTH OF BOSTON AND PHILADEL-PHIA.

In an article in the Forum for July, Dr. J. S. Billings discusses the relative mortality-rates of Boston and Philadelphia. Contrary to the usual rule that the larger a city the higher its death-rate, Boston has an average mortality of 23.59 per thousand, while Philadelphia has a death-rate of only 21.86. Some of the causes leading to this are the lower average level of Boston, the larger proportion of foreign-born inhabitants and a greater density of population. The effect of race upon mortality cannot be compared, as in Philadelphia the birthplace of the parents of the decedent is not registered as it is in Boston.

"The low proportion of tenement-houses in Philadelphia, and the fact that in that city each family, as a rule, occupies a separate dwelling, has a powerful influence in reducing its mortality. The figures for typhoid fever indicate a more polluted water-supply for Philadelphia than Boston. Diphtheria, measles, whooping-cough, caucer and heart-disease were more fatal in Boston; but the differences in death-rates due to these diseases are insignificant in comparison with those due to consumption and pneumonia."

The death-rates for these two diseases were for Boston 38.7 and 22. as against 29.8 and 16.4 for Philadelphia.

The returns for alcoholism, while below the true rates, show that alcoholism is nearly twice as fatal in Boston in proportion to population.

The conclusion drawn from the statistics is that the persistently higher death-rate in Boston for the last twenty years has been mainly due to diseases of the lungs. Climatic conditions have, in the long run, but small effect, for the extra mortality from respiratory diseases in Boston during the winter months, is to some extent counterbalanced by the increased mortality of children in Philadelphia, owing to the higher, more continuous summer temperatures.

The sewer system of Boston is better than that of Philadelphia; but although the death-rate of the latter city is already below that of Boston, it is probable that more can be done towards further lowering its mortality than can be done for Boston.

³ La Presse Médicale Belge, Bruxelles.

"Philadelphia has the immense sanitary advantage of having the great majority of its families supplied each with a separate house; and if it can obtain a fairly pure water-supply, and a properly planned and well-constituted system of sewerage, it should be possible to maintain its death-rate for a series of years at about eighteen per one thousand, while it is not probable that the death-rate of Boston can be brought by such means below twenty-one per one thousand for more than a year or two at a time. The causes of disease and death which the health authorities of Boston can probably attack with the most hope of good results are consumption and pneumonia; and this is to be done largely by educating the class most affected by these diseases as to the comparatively simple measures required to check their spread and by aiding in thorough disinfection of houses, rooms and bedding infected by their germs."

There is a closing satisfaction given the Boston reader, however, in the statement that "the man who lives in his own house in Boston has as long an expectation of life for himself and his family as the man under similar circumstances in Philadelphia."

INDIAN MEDICAL CONGRESS.

DURING recent years the amount of good medical work done in India has been steadily increasing. Although the first impulse and much of the subsequent advance is due to Englishmen, there is a constantly increasing number of native medical men of high education and ability. Both English and natives have already done, and are now doing, useful and important work. The empire is very large, the distance from Europe great; and much of this work has not received the attention which it deserves.

In order to bring together members of the profession scattered through India an Indian Medical Congress has been inaugurated, and will meet in Calcutta during Christmas week.

Though the Congress is primarily Indian, the Executive Committee have invited their confrères from other countries. Apart from the medical work of the Congress, which promises to be interesting and instructive, there will be the opportunity of seeing India and visiting its chief cities. There are few more interesting countries historically or archæologically, and the scenery of the Himalayas is amongst the grandest of the world. The climate during the winter is perfect, the facilities of travel excellent; and two or three months, inclusive of the double voyage, would suffice not only for the work of the Congress but for a visit to most of the chief centres of interest. The journey from London to Calcutta occupies about eighteen days by the way of Brindisi and Bombay.

The papers of the Congress will be largely on subjects connected with India, where the conditions of life and medical practice differ widely from those of Europe.

MEDICAL NOTES.

CHOLERA. — There has been a continued and marked abatement of the cholera at St. Petersburg; but it has been decided not to hold the autumnal mobilization of troops this year. Four cases of cholera with three deaths occurred at Adrianople on July 23d. Elsewhere the cases have been few and scattering, not causing any special anxiety.

ILLNESS OF PROFESSOR HERMAN HELMHOLTZ. — Professor Herman Helmholtz was taken ill on July 12th, with cerebral symptoms, and is now suffering from left-sided hemiplegia.

BEQUESTS TO NEW YORK HOSPITALS. — The Presbyterian and St. Luke's Hospitals of New York, have each received a bequest of twenty-five thousand dollars under the will of the late John Crerar of Chicago.

PHYSICIANS AS DISPENSERS OF THEIR OWN MEDICINES. — According to a bill now before the French Senate, after passing the Chamber of Deputies, physicians are not to be allowed to dispense any medicine at all.

A PENSION FOR THE WIDOW OF DR. HASSALL. — Mrs. Hassall, the widow of Dr. Arthur Hill Hassall, who died recently at San Remo, has been granted by Lord Roseberry a pension of fifty pounds a year from the Civil List in recognition of her husband's services.

MUNICIPAL HONORS TO PHYSICIANS.—The city council of Paris has paid municipal tribute to three more physicians by giving their names to certain new streets. Two streets in the immediate vicinity of the Salpêtrière are to be called Rue Charcot and Rue Ulysse Trélat, while the present Rue St. François-de-Sales is to be extended and renamed Rue Trousseau.

SIR JOSEPH LISTER AWARDED THE ALBERT MEDAL. — The Albert Medal of the Society of Arts, has been awarded, with the approval of the President of the Society, the Prince of Wales, to Sir Joseph Lister, "for the discovery and establishment of the antiseptic method of treating wounds and injuries, by which not only has the art of surgery been greatly promoted and human life saved in all parts of the world, but extensive industries have been created for the supply of materials for carrying the treatment into effect."

SENOR AGUILERA AND THE SPANISH MEDICAL PROFESSION. — The medical profession of Spain has recently had an unpleasant experience of the truth that no man is a prophet in his own country. The Spanish Minister for Home Affairs, Señor Aguilera, wishing to satisfy himself as to the nature of some suspicious cases of "choleriform" disease which occurred on the Portuguese frontier, had specimens of the excreta sent to the Pasteur Institute in Paris for examination, an action which caused great indignation in the profession in Spain.

THE ORLOFF-DAVIDOFF PRIZE.—A prize of 10,000 children rubles (\$5,000) is offered by Count Orloff-Davidoff for health.

the discovery of a certain cure or preventive of cattle plague. The efficacy of the remedy is to be proved by the same standard as those known to science as protective against small-pox, anthrax, etc. The award of the prize is in the hands of the Curator of the Imperial Institute of Experimental Medicine of St. Petersburg, acting on the advice of a committee of experts selected for the purpose. The competition is open to the whole world with the exception of active members of the above-named institute. The description of the proposed remedy must be clear and complete; it must be sent in, under the ordinary conditions as to concealment of identity on the part of the author, on or before January 1, 1897. The award of the prize will be made on January 1, 1899. If no remedy satisfies the committee, a further competition will take place, and the award made on January 1, 1902.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, July 25, 1894, there were reported to the Board of Health of Boston, the following numbers of cases of acute infectious disease: diphtheria 35, scarlet fever 27, measles 10, typhoid fever 13.

THIRD NEW ENGLAND CONFERENCE OF CHARITIES, CORRECTION AND PHILANTHROPY.— The Third New England Conference of Charities, Correction and Philanthropy, will be held at Newport, R. I., October 10, 11, 12 and 13, 1894, under the Presidency of John Hare Powel. Rev. John Graham Brooks, of Cambridge, will read a paper at the opening session. The remaining five sessions will be devoted to the following subjects: (1) Reports, covering New England, on Charity Organization, Prisons, Work for Children; (2) Public Relief and Almshouses; (3) Charity Organization; (4) Work for Children; (5) Medical Relief and Hospitals, Dr. W. H. Carmalt, New Haven, Conn.

NEW YORK.

THE NEW YORK LYING-IN ASYLUM. — The managers of the New York Lying-in Asylum, which has for many years maintained an admirable outdoor as well as indoor maternity service for the benefit of the poor, have secured as the future home of their institution the fine old mansion of the late Hamilton Fish, standing at the corner of Second Avenue and Seventeenth Street, and fronting on Stuyvesant Square.

ONE HUNDRED YEARS OLD. — Mrs. Elizabeth Jervis of Amytyville, Long Island, celebrated her one-hundreth birthday on July 20th. Mrs. Jervis was born at Sayville, Long Island, and was married in 1812, her husband dying in 1863. She has been the mother of eight children, seven of whom are still living; the oldest being seventy-eight, and the youngest sixty-one. She has twenty-three grandchildren, thirty-eight great-grandchildren, and three great-grandchildren. She is in excellent physical and mental health.

COMMUTATION OF MRS. HALLIDAY'S SENTENCE. Governor Flower has commuted the sentence of Lizzie Halliday, the Sullivan County murderess, who was to have been executed in August, to imprisonment for life in the State asylum for insane criminals at Matteawan. The reason for this action he gives in the following memorandum: "The defense was insanity, and the evidence to establish it was very strong. Dr. Selden H. Talcott, medical superintendent of the Middletown State Hospital, and Dr. Henry E. Allison, medical superintendent of the Matteawan, both of them men of great experience, testified that she had at different times, some years before the homicide, been under their charge as an insane patient, at which time she was unquestionably insane, and that they had no doubt that she was insane at the time of the homicide. Three commissioners, appointed since the trial, have, after a careful examination, filed their report, stating that, in their opinion, she is insane. Under these circumstances I do not think her a fit subject for the death penalty. It will be much safer to commute the sentence to life imprisonment."

VACATION SCHOOLS. — On July 23d, the Society for Improving the Condition of the Poor inaugurated the "experiment of vacation instruction of a nature akin to recreation, by providing a six weeks' midsummer term that shall win the children who loiter in the heated streets of New York while the public schools are closed." The Society has appealed to the public for subscriptions amounting to \$5,000, with which to pay teachers' and janitors' fees, and the Board of Education has agreed to co-operate by allotting four of the public-school buildings in crowded and destitute districts. These attractive manual training and kindergarten schools are free to every child willing to attend, and the sessions last but four hours a day, from nine until one. The services of a superintendent and an efficient corps of teachers have been engaged, and they will be aided by the supervision of a gentlemen experienced in these educational methods, who will act for the Society. It is believed that the benefit to the children who attend will be very great, and it is hoped that the scheme thus inaugurated may prove to be an object-lesson so encouraging as to secure wider adaptation in the ordinary curriculum of the common

HIGH MORTALTY-RATE. — What will probably be the highest mortality of the present summer was reached during the week ending July 21st, when the number of deaths reported amounted to 1,106. This is an increase of 187 over the previous week, and represents an annual death-rate of 29.42 per thousand of the estimated population. Six hundred and twenty-nine deaths were of children under five years of age. It is gratifying to note that notwithstanding the high mortality, the number of births reported in the city exceeded the deaths, amounting to 1,145. During the week ending July 14th there were reported 969 deaths, which is a decrease of 10 when compared with the previous week, 127 below the record of the corre-

sponding week in 1893, and 259 below that of the average of the corresponding weeks for the past five years. This represents an annual death-rate of 25.80, or a decrease of .28 from the preceding week, and 6.90 below the average of the corresponding weeks for the past five years. Of the week's deaths 603, or nearly 66 per cent. of the whole number, were among children under five years of age. Diarrheal diseases naturally caused the greatest mortality, the number of deaths amounting to 268, or more than 25 per cent. of the total deaths. This is an increase of 28 over the preceding week, but a decrease of 64 when compared with the corresponding week in 1893, and 143 below the average of the corresponding weeks of the past five years.

Miscellanp.

THE PHYSICIAN'S REMUNERATION AS SEEN BY A LAWYER.

THE question of the physician's actual and deserved remuneration has been a subject of general discussion this year, both in the journals of this country, medical and popular, and in several English medical papers. The latest contribution to the subject is in the New York Law Journal. The writer, viewing the subject from a lawyer's standpoint, takes exception to a recent enthusiastic and liberal estimate of a physician's proper fee on the very ground of its contention that it involves a system of banditti's ransom rather than a conscientious service to mankind for a just compensation.

He lays down the principle, which certainly seems the proper one, that "In dealing with rich patients and clients, physicians and surgeons, and lawyers acting in cases not involving specific property, should make out their bills not commensurately with the wealth of their employer, but simply on the basis that he is rich enough to pay whatever is right. charges should be fixed according to the practitioner's standing and experience and the amount of labor involved, the customary rates of practitioners of equal standing in the same community for similar services being kept in view as a guide and a possible corrective. This general rule would not preclude the acceptance of smaller fees from poor people, but it would debar a practitioner from charging a man worth \$1,000,000 more than one worth \$100,000 for the same service. We believe it is essentially communistic and subversive of professional conscience and dignity to charge a rich man all that can be screwed out of him, in order to make up for what one thinks he ought to have received on account of professional acts of charity or mercy."

DISEASE GERMS IN EUROPEAN RAILROAD CARRIAGES.

DRS. PETRI, Kolb and Friedrich have recently concluded a series of experiments, under the direction of the Imperial Board of Health of Germany, as to the danger arising from the dust in railroad carriages. Their results 1 show a decided risk involved in travel-

¹ Arbeiten aus dem Kaiserlichen Gesundheitsamte, 1893, ix, 3.

ling under the present sanitary conditions of the coaches.

The dust was collected in each instance from a square metre of surface, and from forty-five compartments, representing twenty-one carriages. The inoculations were made upon guinea-pigs. Many of them died of various diseases, and the rest were killed. Three only were found to have tubercles. The number of bacteria was largest in the fourth-class cars, and grew less with each rise in grade of the compartments. In the fourth-class cars the number was estimated at 12,624 per metre; in the third class, 5,481; in the second, 4,247; and in the first class, 2,583. On the seats and upper walls the numbers varied in the four clases from 2,646 to 29, while the roof was Though the third- and fourth-class carriages were the most infected, it was much easier to clean them, as they could be washed with hot water and soap, which could not be so vigorously applied to the better class carriages owing to the carpetings and upholstery.

DR. BROWN-SÉQUARD'S LAST ILLNESS.

Dr. John Ogle 1 has given circulation to an interesting account of Dr. Brown-Séquard's last illness which was written in a private letter from Dr. Dupuy of Paris, Dr. Brown-Séquard's physician. Shortly after his return to Paris in March, Dr. Sequard had an attack of vertigo accompanied by disturbance of vision and followed by a period of unconsciousness.

"At that period the speech remained 'thick' and embarrassed at times, and Dr. Brown-Séquard remarked, 'This is an attack of epilepsy, as you can see.' Instead of going to bed, as desired, he wrote several letters. During the following day he was in the same condition as regards vertigo, hemiopia, and occasional thickness of speech, but there was no aphasia. On the next day (Friday) he consented to take meat, milk and bread in small quantities throughout the day, and was comparatively cheerful. At the close of the day his face became much flushed, and the vertigo and hemiopia very distressing, and in consequence of this he walked from one room to another on 'all fours, giving at the time the analysis of his symptoms and the prognosis of his case, as if he was contemplating and discoursing on the illness of another person. During the night of that day he was seized with vomiting, and in the early morning it was found that he was unable to speak, and that the left arm was paralyzed as to power of movement. Dr. Dupuy found later on that paralysis of the muscles on the right side of the face existed and that the tongue was protruded to the right side. The left leg and the arm and leg on the right side were unaffected. There was no muscular spasm in any part, no interference with sensation, either general or special; but vertigo was much increased, and there was external strabismus of the right eye. The condition of speech was the same, and there was still no aphasia. Towards the evening of the day the face became exceedingly congested on several occasions, and the blood-vessels of the forehead much swollen, and there was drooping of the upper eyelid of the right eye. During the morning of the next day (Saturday) he made Dr. Dupuy understand that he wished to write on a slate, but the result was unintelligible, excepting that the word 'hyperesthesia' was medicine, and the 'great heart of the people' cannot ¹ Lancet, June 2, 1894.

recognized. At 2 A. M. on Sunday he became entirely unconscious, and coma set in. The axillary temperature rose to 40° C. (104° F.), and he died without a struggle near midnight. After the cessation of breathing and of the heart's action, all the muscles of the legs and arms were for several minutes in a state of fibrillary contraction; and the axillary temperature at the point of death rose to 41.5° C. (105.9° F.). No post-mortem examination could be made."

SCIENTIFIC INVESTIGATIONS AND THE PUBLIC.

In a recent address to the British Economic Association, Mr. Balfour remarked that "the public had never mixed itself up with scientific investigations without spoiling the investigations and doing itself a good deal of harm."

Taking the subject of vaccination as an example, he said he "looked with a sort of remote interest at the quarrel between doctors on the one side and that section of the public who had never studied the question in a scientific spirit, but who were determined that their feelings should override science. He did not say who was right or who was wrong. Science had before been proved in the wrong, and popular feeling, even uneducated popular feeling, had in many cases been proved right; but there could be no doubt that if they were going to allow questions of scientific interest to be decided by universal suffrage, that they would not do much good to universal suffrage, and they would absolutely ruin science. If science was wrong, it could only be got right and placed in the direction of truth by being allowed free play outside altogether the influence of popular forces.'

In commenting upon these remarks, the British Medical Journal says: "The invasion of the pathologist's laboratory by the interviewer and descriptive reporter, which may almost be called a sign of the times, is an unmixed evil from every point of view. The irresponsibility of the new journalism is nowhere more conspicuously displayed than in the lightheartedness with which the latest 'cure' for cancer or consumption is 'boomed' with all the emphasis of sensational headlines, without the slightest inquiry as to the truth of the facts or as to the competence of the authority on which they are given. The mischief thus done is incalculable. It is not merely that the 'man in the street ' is invited to judge of matters as to which he is incapable of forming a rational opinion. False hopes are excited in the breasts of sufferers and their friends, and the bitterness of disappointment is added to their cup of sorrow. The diffusion of sound knowledge on matters appertaining to the health - a thing of the very greatest importance for the welfare of a community - is retarded. Scientific discovery is degraded in the eyes of cultured persons by being applied to such catchpenny uses. The effect on the scientific worker himself is hardly less disastrous. He is in danger of being bitten with the desire for cheap notoriety, and in his eagerness for an unwholesome publicity he becomes too apt to give to the world the unripe results of hurried and imperfect research. A great Father of the Church said, 'Securus judicat orbis terrarum,' but the 'democratic idea' has no place in do the work of a scientifically trained brain."

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METEOROLOGICAL RECORD.

For the week ending July 14th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:-

	Baro-Thermom- meter eter.				Relative humidity.						Velocity of wind.			
Date.	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 ₺. Ж.	8.00 P. M.	Daily mean.	8.00 Å. Ж.	8.00 P. M.	8.00 ▲. Ж.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Rainfall in inches.
8 8 M 9 T10 W.11 T12 F13 S14	30.00 30.11 30.07 30.00 29.86 29.80 29.87	64 66 64 72 74 86 72	70 75 71 83 80 97 79	57 56 56 62 69 75 66	60 56 60 60 61 47 55	61 56 70 54 63 47 76	65 57 62 47	N.W. S.W. S.W. S.W.	N.W. S.W. S.E. S.W. S.W. S.W.	10 6 4 4 16 15 5	8 12 3 11 12 13 2	O.C.H. F.O.C.O.	O.C.F.C.F.O.F.	.01
			:— і	_	_	_	_							_

*O., cloudy; C., clear: F., fair; G., fog; H., hany; S., amoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. 65 Mean for week.

RECORD OF MORTALITY FOR THE WEEK ENDING SATURDAY, JULY 14, 1894.

	Percentage of deaths from					
Estimated population. Reported deaths in each. Deaths under the years. Infectious diseases.	Consump- tion.	Diarrhoal diseases.	Whooping-	Diphtheria and eroup.		
New York 1,956,000 969 608 34.90	7.90	16.80	.20	5.20		
Chicago 1.438.000	l –	- -		-		
Philadelphia . 1,139.457 506 282 29.26	7.98	23.94	2.28	9.88		
Brooklyn 1,043,000 676 441 40.50	6.30	31.95	1.05	4.55		
St. Louis 540,800 - - -	-	12.75	_			
Boston 501,107 195 56 17.34	15.81	12.10	_	3.06		
Washington 285 000 140 56 29.82		16.33	2.13			
VV	7.81	16.38	.78	2.84		
Oldolanda I I I I I I I I I I I I I I I I I I I	10.14 6.71	25.01	3.05	3.12 2.44		
	0.11		3.00	2,77		
DOE 0.0	1 =	_	_	_		
27 784 30 13 10 00	20.00	6.66	_	1 =		
Charleston . 65,165 32 17 28.12	15.65	28.12	=	_		
Portland 40.000		I —	-	_		
Worcester 100.410 39 18 46.08	7.68	35.84	_	2.56		
Fall River 92.233 63 45 59.66	3.14	54.95	_	3.14		
Lowell 90.613 49 28 51.00	14.28	46.92	_	_		
Cambridge 79,607 36 23 55.60	5.56	33.33	8.34	5.56		
Lynn 65,123 13 4 23.07	7.69	23.07	_	-		
Springfield . 50,284 25 14 40.00	16.00	40.00	_	_		
Lawrence 49,900 25 16 64.00	8.00	52.00 19.25	3.85	_		
New Bedford . 47,741 26 13 23.10	15.40	19.20	3.60	=		
Holyoke 43,348 — — — — — — — — — — — — — — — — — — —	14.28			_		
DIOCESOE	19.20	42.84	_	_		
Salem	_	22.22	_	_		
20 200 8 2 12 50	12.50		_	12.50		
Ch -1 90 -06 13 6 7 69		7.69	l –	12.00		
704 - 1 1	14.28	_	_	_		
Name	11.11	-	_	_		
Gloncester 27.293	_	-	-	_		
Tunnton 26.955 6 0 -	33.33	-	–	_		
Waltham 22,058 6 1 16.66	16.66	-	-	16.66		
Quincy 19,642	-			_		
Pittsfield . 18,802 4 1 25.00	-	25.00	_	_		
Everett 16,585		30.00	_	_		
Northampton 16,331 5 1 20.00	20.00	20.00	_	_		
Newburyport . 14,073 9 3 11.11	11.11	11.11	-	_		
Amesbury 10,920 2 1 -	50.00	_	_	_		

Deaths reported 3,257; under five years of age 1,857; principal

Deaths reported 3,257: under five years of age 1,857; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fever) 1,124, diarrhœal diseases 864, consumption 278, acute lung diseases 197, diphtheria and croup 132, whooping-cough 35, scarlet fever 28, typhoid fever 23, measles 17, cerebro-spinal meningitis 14, malarial fever 4, small-pox.4, erysipelas 3.

From scarlet fever New York 9, Brooklyn 5, Cleveland 4, Boston and Cambridge 3 each, Somerville 2, Philadelphia and Lawrence 1 each. From typhoid fever Washington 7, New York 6, Cincinnati 4, Brooklyn 3, Philadelphia, Lowell and Lawrence 1 each. From measles Brooklyn 6, Cleveland 5, New York 4, Philadelphia 2. From cerebro-spinal meningitis Washington 4, New York and Worcester 3 each, Cleveland, Fall River, Somerville and Springfield 1 each. From small-pox New York 4. From malarial fever Brooklyn 2, New York and Nashville 1 each. 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,468,442, for the week ending June 30th, the death-rate was 15.5. Deaths reported 3,101: acute diseases of the respiratory organs (London) 152, measles 163, whooping-cough 75, diphtheria 74, scarlet fever 44, diarrhoa 44, fever 26, small-pox (Birmingham 3, Manchester 2, West Ham and Preston 1 each) 7.

The death-rate ranged from 7.0 in Croydon to 24.1 in Salford; Birmingham 13.3, Brighton 10.5, Cardiff 13.3, Huddersfield 13.2, Leeds 12.1, Leicester 10.2, Liverpool 22.3, London 15.4, Manchester 20.0, Newcastle-on-Tyne 17.6, Nottingham 13.3, Portsmouth 12.8, Sheffield 17.1, Sunderland 18.0.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 14, 1894, TO

Leave of absence for two months is granted Captain Richard W. Johnson, assistant surgeon, U. S. A.

The leave of absence on surgeon's certificate of disability, granted First-Lieut. Frank T. Merriwether, assistant surgeon, is extended two months on surgeon's certificate of disability.

RECENT DEATHS.

DAVID THOMPSON HUCKINS, M.D., M.M.S.S., died in Watertown. Mass., July 21, 1894, aged seventy-five years.

WILLIAM J. LITTLE, M.D., F.B.C.P. (Lond.), M.R.C.S., Eng., the founder of the Royal Orthopedic Hospital of London, died in West Malling, Kent, England, July 7th, aged eighty-three years. He was the author of several works on orthopedic surgery.

Surgery.

DR. JOSEPH HYRTL, the anatomist, died in Vienna, July 19th, aged eighty-three years. He was born in Eisenstadt, Hungary, December 7, 1811, and received his education in Vienna. In 1837 he was made professor of anatomy at Prague where he remained until called in 1845 to the chair of anatomy at the University of Vienna. In 1857 he was chosen a member of the Imperial Academy of Sciences, and was until 1874, director of the Ecole Superieure. He was a most skilful anatomist and many of his preparations have been presented to various anatomical collections in Europe. His best known works are "The Manual of Physiological and Practical Anatomy" and "The Manual of Topographical Anatomy and Its Applications."

BOOKS AND PAMPHLETS RECEIVED.

Manhatten Eye and Ear Hospital Reports, Number 1, January, 1894.

The Removal of Stone in the Bladder. By Wm. 8. Forbes, M.D. Reprint. 1894.

Errors in School-Books. Second competition. Boston: Pope Manufacturing Co. 1894.

Some Observations on an Epidemic of Typhus Fever. By L. D. Pierce Clark, M.D. Reprint. 1894.

First Annual Announcement of the Birmingham Medical College, Birmingham, Ala., Session of 1894-95.

A Case of Cysticercus of the Vitreous. B.A.B., M.D., of Louisville, Ky. Reprint. 1894. By W. Cheatham,

Human Physiology. By John Thornton, M.A. With 268 illustrations, some colored. New York: Longmans, Green & Co. 1894.

Where to Send Patients Abroad for Mineral and other Water Cures and Climatic Treatment. By Thomas Linn, M.D. Detroit: George S. Davis. 1894.

Inebriety or Narcomania, Its Etiology, Pathology, Treatment and Jurisprudence. By Norman Kerr, M.D., F.L.S. Third edition. London: H. K. Lewis. 1894.

The Diazo Reaction of Ehrlich. Atony of the Stomach. Electric Illumination of the Stomach. By Julius Friedenwald, A.B., M.D., of Baltimore. Reprints. 1893-94.

Small Hospitals, Establishment and Maintenance. By A. Worcester, A.M., M.D., and Suggestions for Hospital Architecture with Plans for a Small Hospital. By William Atkinson, Architect. New York: John Wiley & Sons. 1894.

The Graphic History of the Fair Containing a Sketch of International Expositions, a Review of the Events Leading to the Discovery of America and a History of the World's Columbian Exposition held in the City of Chicago. With nearly 1,000 illustrations. Chicago: The Graphic Co. 1894.

A Hand-Book of Medical Microscopy, for Students and General Practitioners, Including chapters on Bacteriology, Neoplasms and Urinary Examinations. By James E. Reeves, M.D. With a glossary and numerous illustrations (partly in colors). Philadelphia: P. Blakiston, Son & Co. 1894.

Lecture.

THE RANGE AND SIGNIFICANCE OF VARIA-TION IN THE HUMAN SKELETON.¹

THE SHATTUCK LECTURE FOR 1894.

BY THOMAS DWIGHT, M.D., OF NAHANT.

(Concluded from No. 4, p. 76.)

THE AGE.

THE diagnosis of the age of bones (children not being considered) resolves itself into the study of processes occurring at three periods; first, that of late adolescence and early maturity; second, that of mature and middle life; and third, that of advanced age.

For the first period our guides are chiefly the union of the epiphyses, and that having occurred, the condition of the line of junction. I have not had the opportunity of making extensive observations at this age, but it is remarkable that so far as they go they all point one way, namely, to the earlier union of distinct parts than accords with the general teaching, and to the speedy disappearance of the epiphysial lines.

I agree with Topinard in looking on our knowledge as very unsatisfactory, but I cannot accept his provisional table, which to my mind puts the dates of union much too late. The following table, giving the time of union of the epiphyses of the long bones compiled from English anatomies, is much better, but still wrong in the same direction.

From 16 to 18 lower epiphyses of humerus (except internal condyle) upper ends of radius and ulna, lesser trochauter of femur.

At 18 internal condyle of humerus, great trochanter. At 18 to 19 head of femur, lower end of tibia.

From 20 to 21 or 22 head of humerus, lower end of radius and ulna, condyles of femur, lower end of fibula, upper end of tibia.

From 22 to 24 upper end of fibula.

My observations on a comparatively small number allow me to offer the following as a provisional chart from 17 on.

At 17 things are much as described as from 16 to 18. but perhaps a little more advanced. The lower end of the humerus is joined, excepting possibly the inner condyle.

Subsequently the process is more rapid, so that the epiphyses of the long bones are usually firmly joined to the shaft at 19. At this age the lines of union about the elbow and hip and ankle are nearly gone. At 20 all are indistinct or quite wanting. As for other parts, the basilar process of the occipital joins the sphenoid at the surface at from 17 to 19, the suture inside the skull being usually closed by 17. Once at 19 I saw the internal suture closed, but not the lower, and on section found a considerable piece of cartilage intervening. In another of the same age, which, however, was not split, there was no trace of a suture. The union of the pieces of the sacrum may be nearly finished at 17. The epiphyses of the crests of the ilia and of the posterior border and inferior angle of the scapula are among the last to unite. They probably join at about 21, but the lines of the crests of the ilia may be seen in parts for some years. As Topinard remarks, individual variations are many. I have several bones from a male skeleton which would seem

¹ Delivered before the Massachusetts Medical Society June 12, 1894.

much younger than those of others of both sexes of the same age. The fact is that this boy of 19, whose bones correspond very well with the usual statements, is the most backward specimen I remember. I think it is pretty certain that in the female the process is completed earlier. I do not agree with Topinard that it is completed earlier in the lower than in the upper extremity.

As I have had occasion to point out, the statements as to the time of the union of the different parts of the body of the sternum found in most text-books are very far from correct, apparently having been copied and recopied. I am glad to find a great modification in the recent editions of the leading English anatomies. The union of the four pieces of the body begins from below, the fourth joining the third by 15 years or earlier. The union of the other parts of the body is completed by the age of 20. I have seen it completed at 161 and at 19 (but not always). In a girl of 17 I have found the first piece of the body distinct, the others being united. I cannot distinctly remember ever having seen the body of the sternum of a white in more than one piece after 20, but once in a man of 46 the union of the first and second pieces of the mesosternum had but just begun.

For the long succeeding period from maturity to marked decline three chief criteria may be considered, namely, first, the union of the different pieces of the sternum and the progress of ossification of the ensiform cartilage; second, the closure of the cranial sutures; and third, the co-ossification of the horns of the hyoid with the body.

The sternum having reached its normal condition of three pieces at 20 (and probably often earlier), the next change is the appearance of ossification in the ensiform cartilage, which may after this occur at any time and is no indication of even middle age. This condition of affairs, namely, a meso-sternum in one piece, a distinct manubrium and ensiform, the latter more or less bony, usually persists throughout life. It exceeds 50 per cent. of my observations on about 150 bodies. As these were on the average much above middle age, it is probable that this condition is even more common. În many cases the ensiform becomes one with the body. Though more frequent after middle age than before it, this is a sign of little value, for it is hard to say when this occurs. It rarely, however, begins before thirty. Union of all three pieces into one piece of bone is uncommon, occurring in less than 10 per cent. This condition is probably dependent on constitutional tendency rather than on age, for in most of the cases which I have seen it apparently occurred before 50. I have met with it at 25 and at Union of the manubrium and body with a free ensiform is even more rare than the last, of which it is presumably a preliminary stage. I may note as a sexual difference that the three parts of the breastbone have a greater tendency to fuse in man than in woman.

The time of closure of the cranial sutures (by which I refer to the three great sutures of the vault) is very uncertain. Perhaps this simple statement would suffice, were it not that rules have been given to determine the age of the skull from the condition of the sutures. In 1890 I published my observations on 100 skulls. The process of co-ossification begins on the inside of the skull. It usually begins at about 30. The order and rate of closure are very varying. Complete

closure may occur at any time. I have an instance of it in this thick calvaria of an epileptic black boy of 15. It does not necessarily depend on the thickness of the skull, for one of a girl of 20 in which they are all open is nearly as thick. Here is the calvaria of a woman of 52 on the outside of which the sutures appear open, though they are mostly closed within. The sutures may be distinct or open in old age, but I consider an abnormally early closure much more frequent. Partially closed sutures alone do not indicate an age much above 80. Sutures absolutely open in most cases mean an earlier age.

My observations on the hyoid embrace among whites only 44 men and 20 women. The lesser horn is often rudimentary or wanting. It may be connected by either a joint or a ligament. Its union to the body by bone is uncommon, and when it occurs is a sign of advanced age. I have seen both lesser horns fused with the body only once before fifty, in a man of 81. Our chief guide is, therefore, the great horns. I have seen them both joined only six times out of 31 subjects under 45 (all but two of which had passed 20). After 45 years both are joined in more than half the cases. They may, however, be free in extreme age.

The general changes in the bones in later life are vague and ill-defined. The atrophy, which is often seen in the bones of the very aged, begins at no definite period. I have in my collection bones of persons over 70 which cannot even on section be distinguished from those of early maturity. In extreme age atrophy is, of course, to be expected.

The skull shows a marked atrophy of the face with an enlarging of the angle of the jaw, especially when The cranium itself does not show the same wasting as the face, but on the contrary may be The idea that the angle of the neck of a diminished is no longer held. The ossithickened. the femur is diminished is no longer held. fication of cartilage, the closure of sutures, increased roughness along lines of insertion of tendons, are often changes due rather to constitutional causes than to age. Their significance must be carefully weighed.

While I have felt justified in speaking with greater confidence on the determination of the sex than I did sixteen years ago, in the question of age it is just the reverse.

ASYMMETRY.

The question of asymmetry of the limbs requires brief mention. I have measurements of the separate bones of about 75 subjects, of which rather more than two-thirds were male. As to the arm, the right humerus is almost always the longer, and the right radius usually; the combined length is almost always greater on the right. I find the average difference 6 mm. Rollet, who measured the bones of 50 male and 50 female subjects, puts it at from 7 to 8 mm.

As for the legs, the femurs differ about 2 mm., one side predominating about as often as the other, the tibiæ by some 3 mm., the left side being more often the longer. The combined length is greater on the left in distinctly more than half the cases, the average excess being from 4 to 5 mm. Rollet makes the differences somewhat greater and apparently finds that neither side is particularly favored. The two longer bones of a limb are usually on the same side, but not always. In Wright's measurements on legs on the living and Garson's on skeletons, each gives the predominance to the left limb. My observations show which is to appear in the Medical Record.

an equality between the sides of the body that is greater than I had anticipated.

I may mention that incidentally to this investigation I have been able to carry some light where it is much needed, namely, as to the value of measurements on the living, but this is foreign to the present discussion. How far inequality of the central nervous system may be correlated with that of the limbs is one of those questions on which surmises far exceed exact knowl-

edge.

I have here the base of a female skull showing side, yet the bones of the right arm exceed those of the left by 1 cm., which though uncommon is hardly remarkable, and the bones of both legs are precisely

THE ESTIMATION OF THE HEIGHT.

If it be asked how far individual variations may affect our success in estimating the height, the answer must depend on the method that is employed. If we follow the best, or anatomical method, namely, that of putting the bones into proper position, making due allowance for soft parts and measuring the height, the individual variation does not count, because the problem is distinctly under the eye. But if parts are wanting so that we must turn to the method of calculating by proportions, individual variations are of the greatest importance. Indeed, they are so important that they make absolute certainty almost impossible. Should the legs be wanting we must turn to elaborate tables which I have calculated to enable us by multiplying the length of the spine from atlas to sacrum by certain coefficients for each sex, to obtain the height; sometimes with wonderful exactness. Still, not only does the length vary considerably, but the number of anomalous spines observed is increasing. Those with six lumbar vertebræ are common enough. My tables show that usually this increases the proportionate length of the spine, but not invariably. Thirteen and eleven thoracic vertebræ without corresponding decrease or increase in other regions are occasionally met with. Then we have the proportions reckoned from the height of the pubes, and finally from the separate bones. From large numbers of subjects measured in our anthropological laboratory, both before or after dissection, I selected forty, twenty male and twenty female, in each of which the humeri, radii, femora, and tibiæ of both sides had been measured. From these I calculated the height according to my own tables from the spine; according to the methods of Topinard, Rollet and Manouvrier from the humerus, radius, femur and tibia. The height may be reckoned from any one of these bones, but I have pursued the method of taking the average length of the bones of both sides, and having found the height from each of humerus, radius, femur and tibia, to take the average of the four as probably the nearest approach to the true height. I have repeated this process according to the method of each of these three observers.

Not to stop for details, it appears that by almost any of these methods we can come within 2.5 cm. or 1 inch in about half the cases, within 5 cm. or 2 inches in about three-fourths of them, which leaves one-fourth remaining in which the error is serious.2

THE SKELETON AND THE FIGURE.

What relation, if any, there may be between the shape of the bones and that of the body, is a very interesting question, which under certain circumstances may well become a momentous one. Can we from our knowledge of a person's figure predicate at least the general character of his bones, and conversely if bones are laid before us can we say anything worth saying as to the soft parts that once clothed them? Surely, putting aside extraordinarily tall or short or peculiar figures, the part we should expect to show the greatest individuality is the skull.

A typical long and a typical broad skull are of course readily distinguished. There are also typical long and narrow and typical short and broad faces, such as we can imagine belonging to the melancholy Trois Eschelles and the rollicking Petit André, the two hangmen in Quentin Durward. In the first the nasal opening is narrow and pointed, in the other broad and almost quadrilateral; in the former the jaw is narrow, the roof of the mouth highly vaulted, and the angle of the lower jaw more obtuse than in the other. But such typical faces are not very common. The characteristic points are usually wanting in clearness. Not rarely they are even transposed, so that, for instance, a short face may have the lower jaw with the angle of a broad one, and vice versa.

Often when overcome by the intense weariness of a Faculty meeting, I have sought relief in asking myself which of my colleagues I should be able to recognize were their nicely macerated skulls set on the table before me. There are striking types of heads in that august assembly, but I am convinced that the skulls I could swear to would be very few. Even so characteristic a countenance as that of the sad-eyed Mongolian is not, when reduced to a skull, so strikingly evident that one will readily pick it out from a number. Most of the characteristics of a head and face, the size being excepted, are in the soft parts.

The problem may present itself in various ways. Supposing that we had the skulls of two known persons before us, the identification should in most cases present no insuperable difficulty. In many cases we could declare with absolute confidence that a certain skull could not have belonged to a certain person. But while I do not question that the careful and minute study of an expert can accomplish much, I am anxious to insist that the identification of a skull from our remembrance of a dead person, even with the assistance of photographs, is in most cases no easy task.

As for the rest of the body, it cannot be denied that our results are more negative than positive. The shoulder-blade is a very variable bone. I do not know what range of variation a great series of the scapulæ of the larger felidæ might present, but a small one shows nothing like that of the human race, I might add even that of the Caucasian. Yet I am quite unable to find any connection between its shape and the contour of the shoulders. The length, breadth, inclination and shape of the acromion are all valueless. Perhaps the only deduction that seems clear is that the leverage required by a long arm calls for a long scapula.

Conversely, however, I may say that heavy shoul-

Formen des Ober und Unterkiefers bei den Europæern. Dr. J. Kollmann. Schweiserischen Vierteljahrsschrift für Zahnheilkunde, 1892.

ders indicate large humeri. In the strongest arm bones the spiral formation is particularly developed. I have often seen in this type a large, prominent, external supra-condyloid ridge suggesting that of the gorilla. I have never seen this ridge strongly developed on a weak or on a female humerus.

The variations in the details of the femur are endless. I have been baffled in trying to find any definite connection between the figure and the various features of the thigh bone, such as length, or angle of neck, its forward inclination, and indeed the general characteristics of the shaft. I have been inclined to associate the length and forward inclination of the neck with a well-marked lumbar curve, but have no evidence that can be called convincing. Two peculiar shapes of the thigh bone have of late received particular attention, one of which, called the pilastered femur, characterized by the prominent posterior ridge and usually strongly bent, is associated with a very narrow tibia. While I have often found this association, it is not invariable, neither does it always imply large muscular develop-The other is the flattened femur, which, except for its greater length, suggests that of the gorilla. have found it generally in very powerfully built men. I have frequently seen the bending back of the head of the tibia which, together with a facet at its lower anterior border, has, in prehistoric skeletons, been advanced as evidence that an upright position was not fully attained. The studies, however, of Mr. Arthur Thomson, of Dr. R. Havelock Charles, and of Monsieur Manouvrier have shown that it is rather to be considered as associated with powers of excessive flexion, and perhaps with the habit of walking with bent knees. These peculiarities are seen in the leg bones of Orientals who sit squatted on the ground. Here is a Chinese tibia which has the lower articular surface continued on to the front. It in no way implies in either case that the upright position cannot be assumed. I have frequently seen a lengthening of the articular surfaces of the head of the femur which is associated with these features, but I have found it independent of any of them. As to the thin tibia of prehistoric skeletons, we often find striking examples of it in the dissecting-room.

To come to practical application, I do not believe that it is possible to predicate the shape of the bones from that of the body, nor vice versa, with any great certainty. Often we should fall into grievous error in attempting it. I have notes on two male subjects that were in the dissecting-room at the same time, which I shall call A and B. A's height was 176.9 cm. (say 5 ft. 9½ in.). B was a mere trifle (6 mm.) taller, but with broader shoulders, broader hips and longer legs. My notes state that A was slender, thin, with a flat chest, rather long neck, thighs somewhat bent outward. B was of very powerful build, with square, thick shoulders, very deep chest, strong legs. B's shoulder-blade is the larger, but by no means strikingly so. Had I measured the arm bones I have little doubt that one factor of B's heavier shoulders would have been apparent. But the femurs were a Each is remarkably heavily made, surprise to me. and though of different types one would hesitate which to ascribe to the more powerful man. In A it approaches the pilastered form, in B it is broad and flat. Here, again, are some very interesting bones from a lightly made, almost puny blind boy of nineteen, who had spent nearly his whole life in an almshouse in a

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sedentary manner, yet they are distinctly strong bones. The humerus in particular presents a striking contrast to that of the female mill operative who seemed almost twice his size.

THE ORIGIN OF INDIVIDUAL PECULIARITIES.

This carries us to the causation of peculiarities of structure. Manouvrier argues at great length that the very thin tibia comes from the great development of the tibialis posticus, and the pilastered femur from that of the crureus, useful muscles for walking in a hard country and with bent knees. While I would be the last to question the tendency of the human body in common with all other organisms to adapt itself to its surroundings, I cannot regard such explanations as sufficient. Manouvrier maintains also that the third trochanter is associated with the action of the gluteus maximus. I have endeavored to show on a previous occasion that the theory which explains the shape of bone by mechanical strain is unsatisfactory. We find the third trochanter only in a certain proportion among savage races in which presumably every one lived pretty much the same life. We find remarkable instances of it in delicate bones which show no signs of great muscular development. Finally, we find it in bones that are too young to admit of its having been pulled into prominence by the muscles of its possessor. Manouvrier argues that the platycnemic tibia is due to the mode of life of the individual from the fact that it is not found in childhood. This does not follow. At early adolescence many changes take place in the framework of the body, then beginning to assume its final shape, which can be accounted for by no mechanical cause. Such are the development of the nose and of the larvnx at the time when, to quote Thackeray, the boy's voice ranges from an unearthly treble to a preternatural base. Moreover, we are not now concerned with the question how great races acquired their characteristics, but whether mechanical explanations will account for the individual peculiarities found among us. Here we see every variety of shape of femur and tibia, to say nothing of shoulder-blades. Here are prehistoric forms occurring in the midst of us. Here are the strongly developed bones of the blind boy who did nothing. I have spoken of the wonderful variability of the human scapula. There is every reason to believe that it acquires its permanent peculiarities at a very early period. Macalister has found characteristic differences in the acromion at from two to four years, and I have two tracings of the outline of peculiar shoulder-blades made for me by Dr. Monks, from two sisters, aged seven and ten. resemblance of these two tracings and the early development of outline is strong evidence that this depends upon other than mechanical causes. Without questioning that external influences can and do modify the shape, I am convinced that the main characteristics of each body are largely hereditary, and are predetermined from the very beginning of development.

THE SIGNIFICANCE OF ANOMALIES.

I have met with most of the recognized anomalies of the skeleton, and with some of great rarity. Large third trochanters, supra-condyloid processes, supratroclear perforations, I have seen galore. Here is a large para-mastoid process of the occipital bone, which is found in many mammals, especially in the herbivora

reaching to the third rib, as is found in gibbons; here is the fossa pre-nasalis, best developed in the seal tribe.

Our collection of anomalous spines shows many curious forms. It is claimed that man is about to lose one of his 24 pre-sacral vertebræ. I have specimens showing the sacrum enroaching on the lumbar region, transforming the vertebra above it into a transitional one and reducing to sixteen the thoracic and lumbar vertebræ, it may be at the expense of one region or of the other. I have instances of the reduction of the thoracic vertebræ to eleven without any remarkable disturbance in any region. There are, on the other hand, cases of the increase of the pre-sacral vertebræ. There may be twelve thoracic and six lumbars or thirteen thoracic and five lumbars. Here are cervical ribs of various degrees of development. This is a bicipital rib recalling the condition in some whale-bone whales. Here finally on a spine showing cervical ribs and the suppression of a thoracic vertebra, is an absolutely unique case of absence of the anterior arch of the atlas.

Much do we hear of atavism. Every anomaly is forced to represent something animal, a short spine is that of the orang, a long one that of the gibbon, one anomaly recalls the sloth, another the seal, another a ruminant, another a marsupial. In the muscular system we have been carried back both to birds and to

We cannot have inherited the fossa pre-nasalis from the seal. If it be inherited at all it must be from some common ancestor. Following this line of reasoning, we find that if all animal resemblances are reversions, the primitive ancestor must have been a very curiosity shop of peculiarities, in direct defiance of that principle of evolution which brings from the simple the more complex. Convinced as I am that every bodily difference between man and non-rational animals is of degree and not of kind, I am astonished and perplexed by the great net-work of analogies extending throughout nature. No one can ignore them without wilfully shutting his eyes. But the very multiplicity of these resemblances assures me that some other law than that of heredity must be invoked to account for They cannot be represented by a tree-like them. figure. They spread out every way. The opinion is growing daily stronger, among serious scholars, that if man's body came from a lower form it was not by a long process of minute modifications, but by some sudden, or comparatively sudden, transition. fabulous missing-link, once so accurately described by Haeckel, is retreating to the limbo of worn-out hypotheses.

THE VITAL PRINCIPLE.

The phenomena of growth show unmistakable evidence of an immanent force presiding over the development of the living organism, essentially different from the forces of non-living matter. Its action is strikingly shown in anomalies; not, indeed, in their production, but in remedying the evil. If, for instance, there be but eleven thoracic vertebræ in a spine, it is impossible to say which one is wanting, for a slight modification is found to have taken place in several by which the symmetrical development of the spine is maintained. In the unique case of total absence of the anterior arch of the atlas, a strong ligament running from the odontoid to each lateral mass holds the bone securely and yet allows movement. By what purely mechanical and rodents; here is a sternum with the manubrium process can this wonderful adaption have been brought about? One of the characteristics of living matter is that its growth is directed to the perfection of the organism as one whole, not as a collection of independent particles. This is the action of the vital principle, which science can no longer afford to ignore.

Original Articles.

WHITE SWELLING OF THE KNEE:

REPORT OF RESULTS AFTER EXCISION OF THE KNEE IN 13 CASES DONE AT THE MASSACHUSETTS GEN-ERAL HOSPITAL BY DIFFERENT OPERATORS.¹

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By white swelling of the knee is understood a chronic, inflammatory process of tubercular origin, which usually begins in the synovial membrane, or in one of the epiphyses adjacent to the joint, and which may be attended by extensive destruction and degeneration of tissue, and be followed by a reparative process, which is a more or less successful attempt at checking the disease.

A tubercular inflammation of the structures of the knee-joint begins most insidiously. The child, primarily well although never very robust, begins to favor the affected knee, showing a very slight limp, which is almost unnoticeable. Any sudden and unusual twist of the leg causes a twinge of pain. At first the lameness is intermittent: it appears for a few days, and then disappears for a time, only to reappear the more evidently. For several weeks nothing else is noticed, until upon more careful examination of the affected knee, a slight puffiness or swelling is found; the natural hollows about the joint are absent. A little pain is occasionally felt in this slightly swollen knee, independent of motion.

More careful examination will reveal tenderness to pressure over the head of the tibia, and at times over the condyle of the femur. This tenderness is most marked over the inner side of the knee. Tenderness, especially circumscribed tenderness, is more constant and, as an indication of osseous involvement, as Senn has suggested, is of more significance than was formerly supposed.

To bend the leg on the thigh completely will be found to be impossible. The knee is held fixed by muscular spasm. The tonicity of the muscles of the joint is of very great importance; muscular spasm—an involuntary fixation of the joint—always demands critical attention. The muscular spasm increases. At night while asleep, the child suddenly gives the characteristic sharp, high-pitched cry of osteitic pain due to muscular spasm. The ability to walk diminishes rapidly, and the child is often bedridden. Abscesses soon form, attended by higher fever, more pain and general disability. Sinuses, ulcers, cicatrices, contractures, follow one another in characteristic succession.

The knee, if considerably damaged and left to itself, and as a result of thickening of the ligaments, adhesions, and the adaptation of the hard and soft structures to the deformed position, gradually becomes more or less fixed in this flexed, everted, abducted and subluxated position. In certain cases, bony ankylosis may

¹ Read before the Warren Club, of Boston, Mass.

occur, or the patient may succumb to a complicated, local or general, tuberculosis, septicemia or its sequelæ, or exhaustion. It is true that milder grades of the affection also occur which, under comparatively simple treatment, subside, leaving a more or less useful joint.

In the clinical picture of chronic knee-joint disease, the symptoms arrange themselves naturally in three groups: (1) those preceding deformity; (2) those associated with deformity; and (3) those attending abscess formation and permanently deformed positions.

The first group includes lameness, sensitiveness, muscular spasm, slight swelling, moderate sensitiveness to pressure about the joint, slight atrophy of thigh and calf muscles, increase of the surface temperature. These signs are apt to be overlooked, not because the doctor is necessarily incompetent to interpret them, but because he fails to make an examination. Every child who limps should be examined very carefully at once, for evidence of incipient trouble in the kneejoint, or in the other joints of the lower extremity. The ankle, hip and knee-joint limps are distinguishable.

The symptoms of the second stage are an increase of those of the first stage, and are due to poor nutrition and severe traumatisms in the use of the leg. There is found to be more or less pain, night cries, lameness amounting to inability to walk. An acute inflammatory disturbance about the joint results, causing first, pain and tenderness, and finally formation of abscesses. The knee is much swelled; the skin is stretched, pale and shining, with enlarged superficial veins. A deformity is present which is more or less temporary.

In the third stage, however, the tibia is rotated outward and falls behind the normal plane with the thigh. Cicatrices form, in connection with the old sinuses. The limb is partially or completely ankylosed.

In a given case, the process may stop short at any point in the history here laid down.

The treatment of this disease, which has such a progressive, important set of symptoms, depends largely upon the period in the disease at which treatment is instituted.

The indications for treatment are local and general.

The general indication is to improve the nutrition of the patient by means of properly supplied fresh air, a nourishing diet, the relief of conflicting disorders.

The local indications are to provide conditions favorable to the process of repair at the site of the disease, to prevent or to correct deformity, to restore, as far as possible, the functions of the joint.

The local treatment may be classified into The non-operative, or expectant;

The operative — erasion, excision, amputation. There is an impression which seems to obtain in many quarters, that even with continuous rest, a tubercular joint never recovers, and that operative treatment itself, short of amputation, is of doubtful utility. It may be taken as an ascertained fact, that the great majority of tubercular joints will recover, if properly treated, with complete rest to the joint, and under good conditions of hygiene, sea-air and nourishing diet.

If, after the palliative and mechanical treatment which secures absolute rest to the functions of the joint—and this means not only rest from motion, but rest from every trauma—if, after this careful mechanical treatment, some permanent abatement of symptoms does not occur, as well as evident diminution in

the girth of the joint, as shown by accurate, periodical measurement, operative interference is called for.

The length of time required in a trial of this palliative treatment should be decided by the condition of the case itself, but at least three months would seem to be sufficient for a fair trial. It is extremely important not to delay too long, for the operative procedures will be sorely handicapped, if attempted late in the course of the disease.

Dr. V. P. Gibney, of New York, has presented a valuable commentary on the opinion of those who regard the protective mechanical treatment as of little value.

In his final results, in 300 cases of tubercular ostitis of the knee occurring among children treated on the expectant plan with some support and rest at intervals, according to the symptoms, 60 per cent. had motion. Under the fixation plan, with good apparatus, applied during a limited time, 76 per cent. had motion. Under the protective plan—that is, complete immobilization until all acute symptoms had subsided and convalescence could be safely predicted—95 per cent. had motion. In those cases treated by the protective method, it is found that abscesses are uncommon, motion is procured, relapses are not very frequent, deformity is slight, the limit of extension is great.

The protective method of treating ostitis of the knee, commonly known as white swelling, is an important means at our command for checking the disease and preserving a useful limb. In order to insure a satisfactory trial of the protective plan of treatment, the selection of apparatus for each individual case, the accuracy of adjustment, and the continuous and untiring watchfulness over the appliance, as well as its adaptation to the varying conditions of the leg, are all of the greatest importance.

Erasion of the Knes-Joint is the first important operative procedure to be instituted if the protective treatment fails. G. A. Wright, of Manchester, England, presents valuable statistics, which place this operation in its proper relation to other methods of treatment.

By erasion of the knee-joint is understood the removal of diseased synovial membrane and ligaments, and, if necessary, also, to a very slight extent, of bone and cartilage.

The advantages of this operation are:

There is no shortening.

There is no deformity, other than the cicatrix. There is no arrest of the growth of the limb.

Free movement of the joint has resulted, although this is not always desirable.

The causes of failure of this operation are:

Incomplete removal of the disease.

Failure in maintaining asepsis.

Inability of the patient to repair the wound left by the operation.

Prolonged care is required to prevent flexion of the knee. The leg must be immobilized for some time—two or three years, or longer, if necessary.

Wright has reported 37 cases of erasion, which show some failures. In properly selected cases, it is safe to class erasion as an efficient surgical procedure.

Forcible Correction of the Deformity of Flexion.—
In white swelling of the knee there is another operative procedure, which, under certain conditions, is of value. If the knee is flexed, and has remained so for four to six months.

years, it was once thought, because of the shortening which necessarily must have occurred in the muscles, tendons and ligaments of the posterior side of the joint, that in order to correct the deformity, an excision was inevitable.

To-day, forcible straightening is practised successfully upon such flexed and semi-ankylosed knees. Dr. J. Goldthwaite, of Boston, has reported recent cases of his own and others after this operation. In one case reported, after deformity for about fifteen years, there is motion of about ninety degrees.

The operation of forcible straightening is performed by means of a piece of apparatus, purposely devised so that, without increasing the intra-articular pressure, the deformity may be corrected. Seven cases are reported, with good results in all.

Excision of the Knee. — Those cases should be excised which the expectant treatment, properly carried out, has failed to benefit, and in which erasion is contraindicated because of the extensiveness of the disease in the hard parts.

Amputation is necessary for those cases in which there exists disease too extensive for excision, and in which the general health is so poor as to demand immediate relief from the tremendous drain of prolonged suppuration.

Ninety-nine excisions of the knee were done at the Massachusetts General Hospital during the period of ten years prior to May, 1891. Thirteen of these cases have reported years after the operation. This group of operations is interesting, in that 10 of the 18 were fifteen years old and over, the oldest being thirty-one years of age. Two of the cases were aged thirteen and fourteen years respectively, and the age of one was not mentioned in the hospital record and was not obtained. These cases, therefore, represent a group of young adults.

The 13 cases in which the complete results are

known, are here tabulated (see next page).

In most cases the excision was done for tuberculosis in the synovial membrane, which condition in almost every instance had extended to the bone. The disease had been of long duration—several years. There was present partial or complete ankylosis, at a larger or smaller angle of deformity in flexion. Subluxation of the head of the tibia backward, with more or less rotation of the foot outward, was increasingly present.

The operation of excision was done because of the persistence of local disease, because of the failure of the general health, because of the presence of discharging sinuses, and for the removal of deformity.

In a few instances an excision was done to avoid amputation, which seemed inevitable because of the tremendously disorganized condition of the knee-joint. In every case, a complete excision was done, the patella being removed, by a curved incision, transverse to the long axis of the leg, carried through the ligamentum patellæ. Drainage at each end of the incision was usually provided.

In a small number of cases the bone was partially immobilized by means of silver-wire sutures or steel nails, which were subsequently removed. In all cases the leg was immobilized externally from the toes to the hip by a plaster-of-Paris or posterior wire splint, at times including the hip, for a period of not less than four to six months.

By consulting the accompanying table, it will be seen that in each patient, a useful leg has resulted

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 Annals of Surgery, December, 1889.

from the operation. In all instances but one, in which there is a little motion, union has been firm.

The limp is slight. The shortening in the cases which were measured has been from one half to three inches.

With the exception of one case, which reported four months after the operation, the time which elapsed from the date of operation up to the time of observation has been from one to six years.

TABLE OF THIBTERN CASES OF COMPLETE EXCISION OF THE KNEE-JOINT.*

No.	Age	Reasons for Operating	Result After	Union	Limp	Short- ening
1	22	General health failing; deformity; swelling	4 yrs.	Complete	Slight	2} in.
2	20	Apkylosis, with deform-	8 yrs.	Complete	Slight	
3	20	Ankylosis 6 years, with acute symptoms; am- putation later, because all local disease was not removed at first operation.				
4	13	Discharging sinuses 6 years, ankylosis at a right angle.	2 yrs.	Complete	Slight	••
5	15	Partial ankylosis; swell- ing; 4 years' duration; reasons for amputation not mentioned.				
6	31	Swelling, flexed, par- tially ankylosed; dur- ation 2 years.	2 yrs.	Complete	Slight	
7	23	Bony ankylosis, after 7 years of disease, at a right angle; no acute symptoms.	1 y r.	Complete	Slight	1≩ in.
8	29	A slow tuberculosis; swelling; weak leg; inability to walk much.	4 yrs.	Very slight motion	Slight	j in.
9	14	No record of value.	6 yrs.	Complete	Slight	3 in.
10	16	Swelling, pain and flex- ion for 8 years.	6 yrs.	Complete	Slight	2 % in .
11	27	Trouble with knee for 13 years; flexed, tibia subluxated, lateral motion.	6 yrs.	Complete	Slight	2 in.
12	١	For ankylosis and de- formity.	4 mos.	Complete	Slight	
13	27	Swollen, enlarged, pain- ful, deformed for 6 yrs.	4 yrs.	Complete	Slight	1 iu.

^{*}In all cases plaster-of-paris bandage from the groin to the toes; foot at right angle.

This report of excisions is of value because end results are recorded, and because it shows what serviceable legs remain after the removal of the knee-joint in young adults.

There are several questions of importance to be considered in connection with the operation of excision of the knee-joint:

The necessity of internal fixation.

The method of operating.

The external appliance to be used.

The length of time for maintaining immobility. From a careful review of the experience of many operators, it seems that the accurate approximation of the tibia and femur secured by metallic sutures, offers the best internal fixation, better than that obtained by pins and other means.

The transverse incision through the ligamentum patellæ is most satisfactory, as it affords a more thorough exposure of all the joint surfaces than any of the other incisions suggested.

After the operation, a rigid external support is necessary. For a long time — at least a year or more — the unprotected leg should not be allowed to receive the weight of the body.

Immediately after the operation, a proper protection is provided only where both the hip- and ankle-joints are immobilized. This is best accomplished by a plaster-of-Paris roller bandage, extending from the tips of the toes upward and around the body at the hips.

The preservation of the patella is urged and discouraged by equally good authorities. The leg is stiff after operation; there is little use for the quadriceps, and its attachment to the patella, even if preserved, could be of little use. The bones are firmly united together. The patella therefore cannot help in retaining the bones in place. If there is any disease in the patella, complete removal of the bone is desirable, so that no portion of the disease may be left behind.

White swelling of the knee-joint is insidious in its onset, slow in its progress, and if untreated, is sure in its ultimate results. Its clinical course is varied. The indications for its treatment are constantly changing.

In many cases of white swelling of the knee-joint, there comes a time when just as careful judgment is needed to determine whether mechanical means alone shall be depended upon, or whether operative interference is needed to insure the best results, as is required of the surgeon in the care of cases of appendicitis, where he is called upon to decide for or against operation. The immediate danger from an error of judgment is less in the former than in the latter cases, but the nicety of the judgment demanded is equally great.

CASE I. D. B., aged twenty-two. A man of tuberculous appearance, losing flesh rapidly. Presents a right knee firmly fixed, swollen and covered with cicatrices, the remains of old sinuses.

Operation. — Complete excision. Patella removed; silver wire used.

Result, four years after operation. — Good general health; no pain at the seat of operation; complete bony union; a useful leg; slight lameness; shortening of two and one-quarter inches: the right thigh two inches smaller than the left; the right calf half an inch smaller than the left.

Case II. J. C., aged twenty. A man of good general health. Presents a knee completely ankylosed, with deformity — that is, flexion, rotation of the tibia outward and subluxation backward. This ankylosis is said to have followed an axe-wound, which opened the knee joint several years previously.

Operation. — Complete excision. Patella removed. Result, three years after operation. — A friend reports the man as being in excellent general health and able to work. He has no trouble whatever at the seat of operation. His leg is useful.

Case III. C. W., aged twenty. This man had a chronic ostitis of the femur and tibia, in the neighborhood of the left knee-joint lasting six years. The knee was swollen and partially ankylosed.

Operation. — A complete excision. The patella was removed. One month after the excision, on account of a persistence of the local inflammatory processes, the thigh was amputated. The man recovered.

CASE IV. J. C., aged thirteen, a boy who had had for six years a chronic ostitis of the femur and of the head of the tibia, presented a knee firmly ankylosed at a right angle. There were sinuses on either side of the femur, communicating with the carious bone.

Operation. — A complete excision.

Result, two years after operation. — The general health excellent; no pain; a stiff leg; scarcely any lameness: leg useful.

CASE V. C. M., aged fifteen. For four years the patient has had increasing disability of the left knee-joint. The knee was much enlarged, the patella immovable, the contour of the joint obscured, and there was partial ankylosis.

Operation. — A complete excision. The patella was removed. Two months later the thigh was amputated. Two years after the excision and about a year after the amputation, the general health was excellent.

CASE VI. M. M., aged thirty-one, a woman who is said to have had rheumatic fever several years ago, presented a knee which was much swollen and fixed. The deformity had existed for about three months.

Operation. — A complete excision. The patella was removed. Steel nails were used in place of silver wire, but were removed early.

Result, two years after operation. — General health good; absence of pain; a useful leg; complete bony union; slight lameness.

CASE VII. M. Mc., aged twenty-three. A man with a tuberculous family history. He is said to have injured his knee seven years ago. The left knee is flexed to about a right angle; the tibia is subluxated. There is no heat or redness of the skin. The patella can be moved slightly.

Operation. — A V-shaped piece of bone, including the patella, the lower end of the femur and the upper end of the tibia, was removed.

Result, a little over one year after operation. -General health excellent; complete bony union; absence of pain; a useful leg; slight lameness; one and one-half inches shortening.

CASE VIII. K. K., aged twenty-nine. A woman in good general condition, presenting a slow, painless swelling in the left knee, incapacitating her for work. No evidence of any past abscess formation.

Operation. — A complete excision.

Result, four years after operation. — General health excellent; no pain; one and one-half inches shortening of the leg; very slight motion at the seat of resection; a slight lameness; a useful leg. The leg is protected at the seat of operation by a leather corset.

CASE IX. T. M., aged fourteen. A boy with a tuberculous knee.

Operation. — A: complete excision. Silver wire used and subsequently removed.

Result, six years after operation. — General health excellent; absence of pain; complete bony union; very slight lameness; three inches shortening of the limb; a useful leg. There is a tendency to inversion of the foot on the excised side.

CASE X. S. H., aged sixteen years. For eight years has had a swelling of the knee accompanied by pain and stiffness. There is marked flexion of the knee.

Operation. — A complete excision.

Result, six years after operation. — Bony union; there is no pain; the leg is useful; slight lameness; two and three-quarters inches shortening of the excised

CASE XI. I. H., aged twenty-seven years. woman who has had trouble with her knee for thirteen years, that is, slight pain and swelling, and inability to use the knee with perfect freedom. The knee is flexed. There is much lateral mobility. The tibia is subluxated.

Silver wire Operation. — A complete excision. used.

Result, six years after operation. — Her general health is excellent. There is two inches shortening; complete bony union; no pain; a useful leg.

CASE XII. J. M. The left knee is swelled. The tibia, near the joint, measures one and one-half inches more in circumference than does the tibia of the right Ankylosis is very nearly complete at a little side. more than a right angle.

Operation. — Complete excision. Patella removed. Result, four months after operation. — General health is excellent. Gained in weight immediately after the operation; no pain; a useful leg.

CASE XIII. M. G., aged twenty-seven. A woman who, for six years, has had a swelled, painful and stiff right knee. At the time of operation, there was a great enlargement of the right knee, much lateral motion, and inability to raise the foot from the floor.

Operation. — A complete excision. The patella was removed. During the following year, all the tuberculous tissue not having been removed, many curettings were done.

Result, four years and three months after the first operation. - Knee firmly ankylosed. General health is pretty good. Pain is absent; the leg is useful; very little lameness; one inch shortening of the right leg and one inch atrophy of the right thigh.

ICHTHYOL IN GYNECOLOGY.1

BY MALCOLM STORER, M.D., OF BOSTON, MASS.

SUFFICIENT time has now elapsed since the introduction of this drug to form some judgment as to its value in the treatment of diseases of women. While many foreign writers have given us the results of their experience, so little has appeared in this country on the subject that I feel justified in laying it before you.

Much, apparently with justice, has been claimed for ichthyol in other departments of medicine; the question of its value in gynecology has been somewhat vexed, and it may be of interest to give a brief résumé of the results of some other observers, and see how closely they are borne out by personal experience.

The characteristics of the drug generally employed - the sulpho-ichthyolate of ammonium — probably are well known to you. Suffice it to say that it is obtained from a fossil fish deposit, and is a thick brown liquid, with a smoky and to some a highly offensive odor. It is soluble in water, in a mixture of alcohol and ether, in oils, glycerine and fats, and contains about 15 per cent. of sulphur, very intimately combined.2 Discovered by Schrötter,2 it was introduced to the profession by Unna in 1883, and its success in certain inflammatory dermatological conditions soon brought it into great vogue. Unna's theory of its action was that by its reducing power it deprives the endothelium of the blood-vessels of oxygen, and so causes them to contract. While this view is vigorously combated, no better one has been proposed. (See Elliott.) 4

Its use in gynecology was first suggested by Freund in 1890. He claimed surprisingly quick and complete cures in many cases of chronic parametritis, chronic

Read before the Massachusetts Medical Society, June 13, 1894, and recommended for publication by the Society.
 Lurtigeau: Gaz. des Hôp., 1887, p. 165.
 Schrötter: Monatschrift f. Prakt. Dermat., 1882.
 New York Medical Record, 1887.
 Freund: Berl. klin. Woch., 1890, Nos. 11 and 49.

and subacute perimetritis, with exudation and adhesions, cicatricial atrophy of the vagina and cervix, chronic metritis and tubo-ovaritis. He also found it valuable for pruritus and cracked nipples, and relieved a case of catarrh of the large intestine with suppositories. His method in severe cases was to introduce the drug into the system in a variety of ways, using all of the following: sugar-coated pills containing 11 minims, two to eight daily; salve, 10 per cent., for inunction on abdomen; rectal suppositories, containing three minims; ichthvol glycerine tampons, five per cent.

He claimed, first, an extraordinary resorbent action, and secondly, great analgesic power. Subsequent investigators all admit its analgesic qualities, but that it also promotes absorption is as stoutly denied by some

as it is maintained by others.

Following these lines, Reitmann and Schönauer 6 reported on its use in one hundred inflammatory cases, with most gratifying results as regards pain, remarking that the property of promoting absorption also deserves particular mention. Shortly afterwards Bloch 7 gave his results. He too was an enthusiast, and was the first to apply pure ichthyol to the endometrium. He was convinced of its resorbent as well as anodyne action. Great improvement was noticed in cases of acute vaginitis and chronic metritis with venous engorgement. That its effects were not due to the use of a glycerine solution he proved by a series of control experiments with pure ichthyol, and stated his belief that the pure drug was more efficient than the glycerine solution.

Kötschau. in 56 cases of endocervicitis and endometritis, of 127 in which he used ichthyol, in the severer cases combined a preliminary curetting with the iron, massage and douches which he employed in addition to local treatment, and while treatment with other means gives about the same proportion of cures, he regards ichthyol as much safer. But when he speaks of it as a "sovereign remedy for endometritis," one must not be blind to the fact that many of the cases were previously curetted. In 52 cases of afebrile perimetritis he was satisfied that tampons of ichthyolglycerine with ichthyol pills and hot sitz-baths produced a cure more promptly than any other treatment, pain being often relieved by the first application, and the

exudate quickly disappearing.

Thus far all testimony has been favorable. But in 1891, Oberth, of Chrobak's clinic, from the study of 42 cases, concluded:

1) That the salve had absolutely no power of con-

trolling pain.

- (2) That while the pills were usually, though not always, well borne, no improvement in appetite or general condition followed that could be ascribed to them.
- (3) That the suppositories had a negative effect as regards tenesmus, and that they sometimes irritated the rectum.
- (4) That while pure ichthyol applied to the catarrhal mucosa or eroded os would often produce a cure, the results were by no means as good as those obtained by the older astringents.

The only good of the tampons he believed came from the glycerine they contained, and while granting a certain influence against pain denies absolutely any resorbent action.

Pee 10 arrived at the same conclusions, holding that it should be used only symptomatically for pain, and warning that its intra-uterine use might be followed by severe hemorrhage. In the discussion that followed his paper, Veit, Winter, Schaffer and Bokelmann coincided with the reader.

Egasse, 11 in 1891, remarks that in France the claims of Freund have not been substantiated, and that at Auvard's clinic it has been abandoned.

Jadassohn 12 used it in 37 cases of gonorrhes, using a one-to-ten solution, and regards it as more efficacious than even nitrate of silver in the acute stage. Similar good effect was observed by Bloch, but denied by Pee. Later, Columbini 18 and Jullien 14 reported its very successful use in this disease.

Herff 15 is a strong opponent of its having other than excellent analgesic qualities. He discards its internal use as irrelevant, and the salve as merely a form of massage.

Hermann, 16 on the other hand, from 150 cases in which ichthyol alone was used, either pure or in watery solution, finds that it has a distinct resorbent action, and even regards it as a sufficient means whereby to establish a diagnosis between carcinoma and inflammatory induration, as the latter is so quickly controlled by its use.

Schultz 17 thinks it of great value in chronic inflam-

matory conditions.

Polacco, 18 from 972 cases observed in Mangiagalli's clinic, states decidedly that it is the most positive local analgesic known in gynecological therapeutics, and that furthermore it has an undoubted resorbent action in cases of pelvic exudates, and in a subsequent paper 19 he remarks that all authorities admit this. I have shown that they do not by any means all do so.

Albertolelli 20 practically had the same experience as the last writer. He regarded it as especially well adapted to intra-uterine injection, greatly preferring it

to tincture of iodine.

At the risk of being tedious I have given a hint at most that has thus far appeared on the subject, chiefly to show that such opposed results could be obtained by observers employing much the same methods. Two years ago my interest in the subject was awakened, and suspecting that some of these results might possibly be biassed, I have tried to be entirely fair. While I greatly regret that I have not been able to follow all my cases as closely as desirable, from what I have seen I feel justified in drawing quite definite conclusions.

While of course occasional applications have been made in a much larger number of cases, it was used with more or less faithfulness in about 120, but as many of these were in the out-patient clinics at the Carney and St. Elizabeth Hospitals, owing to the exasperating irregularity of the attendance of the average out-patient as soon as somewhat relieved, it would be impossible to say just which cases deserved to be included in tables, so I will attempt no statistics, but merely state the impressions I have drawn from its use.

Without going into the finer distinctions of pelvic

<sup>Reitmann and Schönauer: Wien, klin. Woch. 1890, No. 23.
Bloch: Wien, med. Woch., 1890, No. 50.
Kütschau: Mun. med. Woch., 1891, No. 1.
Oberth: Wien, klin. Woch., 1891, No. 16.</sup>

¹⁰ Pee : Zeitschrift f. Geb. u. Gyn., 1891, xx.

11 Egasse : Hull. de Ther., Paris, 1.91, cxxi.

12 Jadassohn : Deutsche mcd. Woch., 1892, No. 38.

13 Jadassohn : Deutsche mcd. Woch., 1892, No. 38.

14 Julien : Medical Week Ap., 1894.

15 Herff : Mun. mcd. Woch., 1891, p. 313; 1892, p. 941.

16 Hermann : Centralbi, f. Gyn., 1892, No. 50.

17 Schultz : Centralbi, f. Gyn., 1893, No. 59.

18 Polacco : Centralbi, f. Gyn., 1891, No. 50.

19 Polacco : American Journal of Obstetrics, Ap., 1894.

20 Albertolelli : American Journal of Obstetrics, Ap., 1894.

pathology, I would say that in cases of moderately acute pelvic inflammation, with much pain, but where an operation did not seem indicated, or where one if advised was refused, the method pursued was as follows: Every third day after carefully drying the vagina, its vault was freely painted with ichthyolglycerine, ten per cent., or with pure ichthyol, followed by a pad soaked in the solution, which in turn was guarded by a dry pad to protect the ciciling. In addition to this, full hot douches were sometimes employed. Some cases where they were not used improved quite as rapidly as the others. In perhaps a dozen cases ichthyol pills were given. No discomfort from them was noticed, except one or two dyspeptics complained of the taste of the eructations. Von Nussbaum took fifty pills a day with no bad effects. Baumann says that doses of from three to five drachms daily cause merely copious watery discharges. On the other hand, I cannot say that any of the patients taking the pills seemed materially the better for them. In nearly all the appetite improved, but this may have been due to improvement in the general condition. In six cases of deep seated pelvic pain the ointment was tried, and possibly the very slight but positive relief that was observed may have been due to massage.

In a number of cases I used a suppository containing three minims which was allowed to dissolve in the vagina every night, with very satisfactory results, and now I frequently order them. Care should be taken that in such suppositories the drug is thoroughly mixed with the vehicle, and not merely enclosed in a capsule as is a favorite practice in France. I regard it as distinctly undesirable that the pure drug should be used for any length of time without the physician's control

Looking back on this class of cases, I can only say that they seemed to improve faster than where other methods were employed. The relief to sharp pain was fairly constant and immediate, and in a few cases a single application gave almost entire relief. To be sure, sometimes a single painting with some other drugs has a very prompt action, but I do not think quite so often. Dull aching pain was not so easily reached, but it was the exception that some relief was not experienced after a number of applications. I found rather better results to follow the use of the pure drug than did that of the glycerine solution, although care had to be taken not to desquamate the vagina—a result which sometimes follows also the over-enthusiastic use of tincture of iodine.

Admitting its anodyne effect, the following case will show that it also sometimes has a resorbent action:

E. R., first seen September, 1892. Twenty-five.

Married eight years. Two children, the youngest five.

Neither labor instrumental, but a somewhat long puerperium after the last. Since then three miscarriages. Has not been well since the last miscarriage in March, 1892.

Three weeks later had an offensive discharge for a few weeks. Early in July had an attack of severe abdominal pain, and a pelvic abscess was opened by the vagina, but soon allowed to close up. A month later had a return of the pain, amounting to agony when the bowels moved. Catamenia were fairly regular, but not marked by any great increase in the pain. When first seen she was in good general condition, except for a slight afternoon rise in temperature. The posterior vagina and both sides of the pelvis were filled

by a very hard, board-like mass, in which nothing definite could be made out. In fact its hardness was such that a previous examiner had been led to make the diagnosis of malignant disease. There was exquisite local tenderness. The patient was put on applications of thiol, which is practically the same as ichthyol, alternating with the latter, with hot douches, which she had been taking previously. After ten days' treatment the mass was much softer and less tender, and the pain had vanished. Defecation even was now painless. After a month the uterus was easily felt anteriorly, and it was fairly movable, while to the left and posteriorly was felt a soft, enlarged and fluctuating tube, and behind the uterus a tender and indurated ovary closely connected with a hard mass filling the right pelvis. Improvement continued under treatment, and the patient was subjectively perfectly well until September, 1893, when the old symptoms returned, and the pelvis was again found filled with exudate. This time the pain was controlled by a single application, and a week later the anatomical condition was much improved. In October catamenia lasted longer than usual, but the patient said she had never felt better in her life. By December there were only traces of exudate left, and what fluid the tubes previously contained had now been evacuated. Douches were not used in this last attack, yet improvement was quite as rapid as in the first.

This good result was by no means unique. Very possibly there would have been equally prompt relief under other treatment, but I have seldom seen cases like it do so well when other treatment has been employed.

Cases of chronic endometritis seen at comparatively long intervals were treated with pure ichthyol applied to the fundus, after a preliminary partial disinfection with lysol or creolin, and the relief from local pain and dragging was constant, and generally there was in a short time much less leucorrhea. Of course very many obstinate cases finally came to curetting, but my impression is that as many, if not more, were cured or relieved than were by any other treatment. In no case was there any real pain from the application, that is, that was not merely due to the passage of the applicator, or to the preliminary slight dilatation. It is to be remembered that cramps following the intrauterine use of iodine are by no means rare. Pee spoke of hemorrhage sometimes following the intra-uterine use of ichthyol. I have not seen any such immediate effect, but in two cases the following catamenia were prolonged much beyond previous experience, an effect which had not followed the previous use of iodine, nor, on the other hand, had much improvement. Both these cases were subsequently practically cured by ichthyol. I have in mind several other cases previously treated by other gentlemen by the ordinary means which were promptly cured by ichthyol.

In packing adherent retroverted uteri it has been my custom to dip the first two pads in the ichthyolglycerine solution. I am convinced that since I have done so I have seen many such uteri loosen up and become replaceable that otherwise would have been very obstinate. Another advantage is that it being decidedly inimical to many forms of bacterial life, as shown by Fessler ^{\$1\$} and Abel, ^{\$2\$} when such a packing is removed it is much less offensive than the ordinary

Fessler: Klin. exper. Strudien. über chir. Krankheiten.
 Abel: Centralbl. für Bakt. u. Parasit., 1893, xiv., No. 13.

glycerine pack — except, of course, for its characteristic ichthyol odor. Here let me say that I have never had a gynecological patient complain of its odor. Purely as an antiseptic its value is not very great, but prolonged immersion in the pure drug destroys strep-

In erosions naturally the chief attempt has been to remove the cause, but in the cases where intra-uterine treatment was not adopted there was improvement, although perhaps no more marked than under other treatment.

I have not tried it in enough cases of gonorrhea to form any opinion as to its value. In four the few times it was applied were followed by little result, while in a fifth obstinate case the very free leucorrhea almost stopped after six applications to the endometrium, combined with daily lysol douches. is due the credit I am not certain. Lately it has been used quite extensively in the male urethra. I tried it in one case of female urethritis with no effect that I This case promptly improved with nitrate of silver. The results of Bloch, Jadassohn, Columbini and Jullien warrant further experimentation in this direction.

I have used the salve and the pure drug in a number of cases of pruritus of the vulva and anus. There was improvement, but no cure in all. One severe case was painted extensively with a solution in collodion (1-8), and after the somewhat natural stinging had vanished relief was complete for some time.

In a few cases of painful hemorrhoids it seemed to relieve the discomfort by lessening the congestion.

The use of the collodion solution is most satisfactory in cracked nipples.

CONCLUSIONS.

(1) While ichthyol is by no means the gynecological panacea that some observers have claimed it to be, still it has sufficient approved value to deserve a very high place in our list of remedies.

(2) That while its chief action is to relieve pain it does possess certain resorbent qualities, which in some

cases are relatively powerful.

(3) That its use is unattended with danger or discomfort.

(4) That the use of the pure drug is generally more satisfactory and reliable than that of solutions.

(5) That it has not yet been proven that it has any gynecological value other than as a local application.

Articles on the subject not referred to are:

Gadde: Beitrag z. Aus. u. In. Anwendung des Ichthyols. Ther. Monatschrift, Berl., 1890, iv, 121.

Rschen: Iktyolets Anvendelse I. Gynekologien. Gyn. Og Obst. Med., 1891, viii, 281-321.

Schultz: Pest. Med. Chir. Presse, 1892, xxviii, 787.

Marjanchik: (Treatment of Endometritis by Ich.) Vrach, 1892, ziii, 799-855.

linski: (Application of Ich. in Therapeutics, Surgery, Dermatology and Gynecology), Moskow, 1892.

Cocq: Note Sur Ich. in Metrites. Clin. Brux., 1893, viii, 180, 212.

FOR BETTER HEALTH OFFICERS, it has been resolved by the Ohio State Board of Health, that Medical Examining and Licensing Boards of the various States be respectfully urged to provide, where permissible, that medical colleges to be considered in good standing shall devote not less than forty hours to the teaching of hygiene, and require an examination in that branch of medical education. — Sanitary Era.

APPENDICITIS: WITH A REPORT OF THREE CASES.1

BY H. H. A. BEACH, M.D., BOSTON.

Dr. RICHARDSON'S recent review of more than one hundred cases of a disease so deadly as to challenge every resource a skilful physician or surgeon can take to the bedside of his patient impresses deeply the conviction that the truest conservatism in the treatment of appendicitis, as in other diseases, provides relief with the least risk to life. In estimating the comparative dangers of operative or non-operative treatment cluding all varieties of medication, incisions and the appropriate time for them, drainage, sutures and other details of dressings, as shown by the current medical literature of the past ten years - it is clear that such varied experiences as have been the fortune of competent medical observers, able anatomists and expert surgeons, giving rise to equally varied opinions upon treatment, point to a variety of conditions that may be conveniently included under the term "appendicitis," with the understanding that, without qualification, the word does not completely express the pathological associations of the disease.

The well-known differences of opinion existing among those who have had experience in its treatment are fairly explained, it seems to me, by the significance attached to the term in their minds through the observation of cases which, if not exceptional, are not fully representative of the disease. To one practitioner appendicitis may signify a simple distention of the appendix, with more or less local pain and tenderness, with or without constitutional symptoms. To another, a gangrenous inflammation of the appendix, discharging, or on the point of discharging, into the largest absorbing cavity of the body the foulest virus, only comparable with that of the rattle-snake in its deadly effect. Between these two extremes are other conceptions of the disease not always clearly defined. The treatment applied must be correspondingly uncertain and vaciliating. Naturally the practitioner who has seen only the first class of cases always recover under expectant treatment looks upon the practice of his brother, who operates in all cases because his experience has taught him that only those recover, as unnecessarily radical; and in turn the latter regards his brethren who employ the expectant method as lacking in the courage necessary to save their patients, and the recoveries following such treatment as fortunate accidents.

Under the most favorable circumstances the operation is not devoid of danger, and should not be undertaken without a full understanding with the patient or friends of a possible fatal result. In this connection a rare complication in a case promising the very best result in my own practice was the occurrence of a secondary hemorrhage. The bleeding was arrested with difficulty, but the patient never recovered from the exhaustion and inflammation following. Hernia through the cicatrix of the wound may occur in any case. It has not happened to my knowledge in either of my cases. To provide for that possibility I usually order an abdominal belt to be worn when the patient leaves his bed. The tendency to hernia would be greatest in the cases requiring the largest incisions.

The question of when to operate and when not to

¹ Remarks made at a discussion upon Appendicitis before the Surgical Section of the Suffolk District Medical Society, December 23, 1893.

operate is too large to be included in any formula. Like the judgment required in the consideration of strangulated hernia, it must be matured in the face of the difficulties, always giving the patient the right to the doubt. It is easy to conceive of a case where a slightly irritable appendix had been made more so by an overloaded intestine, giving rise to some tenderness, and pain in the right iliac region, some induration and a feeling approaching fluctuation, due to edema, but suggesting pus. It is also easy to understand the satisfaction which would follow the disappearance of the fluctuation, the lump, the tenderness, the pain, after the administration of saline cathartics, and the temptation it would offer to classify such a case among the cures of appendicitis, to those unfamiliar with the typical case of neglected appendicitis which enters the hospital at a time when any operation can only be a forlorn hope. I have selected the two cases which follow, from my hospital records, to illustrate that side of the question.

CASE I. A male, age twenty-three. Five days ago he was seized with pain in the right iliac region, which became more severe on the following day, with the addition of nausea and vomiting. These symptoms continued until he entered the hospital. There had been no movement of the bowels for five days.

Patient well developed and nourished. covered with a thick white coat. Chest negative. Abdomen considerably distended, typanitic, excepting an area of dulness the size of a hen's egg in the right iliac region, which upon palpation corresponded with a well-defined mass, tender and fluctuating. By the rectum a dome-like tumor could be felt high up on the right side. Temperature 97.5°, pulse 64, respiration 26.

Under ether, a careful dissection was made down to the peritoneum, which was cautiously opened to avoid any possible adhesion to the intestine. There was an immediate escape of several ounces of thick and very offensive pus, which was free among the intestines. The latter were somewhat bound together and covered with patches of lymph. The cavity was carefully washed out and drained. For the next twenty-four hours he was very comfortable, and there was very slight discharge from the wound. This condition continued through the next day, when he had a free movement of the bowels. On the following day the wound was clean, and there was very little discharge on the dressing, and his general condition remained about the same until half-past eight in the evening, when he had a audden collapse, from which he did not rally in spite of every stimulus. He lingered in this condition until eleven o'clock of the following night, when he died.

CASE II. A male, age nineteen. There was the history of vague cramps in the right iliac region for With that exception he was perthe past year. fectly well until four days ago, when he had a sharp pain in the right iliac region with chills, nausea and vomiting. He has grown rapidly worse. The bowels have been constipated since just before the attack. The abdomen had become tympanitic and distended from the day of admission. There was marked tenderness of the right side, and the space between the superior spinous process and the last rib was flat on percussion. The rectum ballooned. The face was anxious. Pulse 136, rapid and feeble; temperature 103.5°.

An exploratory incision down to the peritoneum

showed that membrane much thickened. Upon opening it, about six ounces of very foul pus was evacuated. The intestines were inflated, but not walled off from the abscess, which extended deeply into the flank, requiring an extension of the original incision nearly to the external border of the quadratus lumborum, to secure adequate drainage. The appendix was short, much thickened and gangrenous, with a perforation at its base opening directly into the cecum. Three concretions rolled out of the opening upon raising the appendix, which was removed, and its region carefully walled off from the abdominal cavity with gauze. In spite of free stimulation and oxygen, he steadily failed, and died on the following morning.

I think that others will agree with me, that these two instances are typical of hospital experiences. To those familiar with death from septicemia, the cyanotic appearance of patients whose cases end fatally, the foul character of the pus (contaminated with intestinal gases and infected with germs whose septic quality cannot be questioned) and the mode of death, leave little doubt as to the cause in the minds of careful observers. The death of our lamented colleague, Dr. Charles P. Strong, from septicemia in a few days following a slight infection received at an operation of that character, is an impressive example of the deadly quality of the virus which may be germinated in these cases and of the importance of its recognition.

I read in a recent argument of Dr. Gordon, of Portland, Me.,2 in favor of treating all cases in the early stages by salines, that "the effect of inflammation is to close the end nearest to the cecum, so that no material escapes from the bowel. Salines do not, therefore, cause extravasation from the bowel." The only comment to be made upon Dr. Gordon's argument is, that he was fortunate in having the protection of a closed appendix in the cases treated by him; but I doubt if he can rely upon that protection. case I have just quoted salines would have flooded the peritoneal cavity with liquid feces; for the little finger could be easily passed through the perforation at the base of the appendix made by the foreign body directly into the cecum. I think that either of my colleagues at the Massachusetts General Hospital could testify to similar experiences. To quote again from Dr. Gordon's paper: "I have never seen a case, with one exception, where any fecal matter has existed in the lumen of the appendix, no matter how large the lumen." Opposed to his experience, I make the following quotation from Fenwick's report: 8 " Out of 125 cases which could be examined upon this point, 55 contained a concretion composed either of feces or some other foreign substance." In my own experience it has been usual to find concretions in the acute cases when it was possible to identify the appendix. I have never failed to find it in relapsing cases. Dr. Gordon states again, that in appendicitis, "there is a perforation through the appendix only, which allows some septic material to escape while the opening to the bowel is practically shut up." Now, while I would not undertake to say exactly how many operations I have witnessed or performed for the relief of appendicitis, my impressions are clear that in acute cases it is as common to find it open into the intestine, as closed. I would not take the position of advising operation in every case, for I have had a fortunate experience in

Boston Medical and Surgical Journal, vol. 129, p. 557.
 Lancet, December 14, 1884.



not losing any case treated without operation; but I do not regard such cases as cured in the sense that they would be after the removal of the appendix. To show what risks such patients always incur, I have only to make a brief quotation from my hospital records:

Patient, a male, age twenty-nine. Entered the hospital with temperature 99°, pulse 64, respiration 26, and a history of four attacks of abdominal pain, the last of which became localized on the right side and occurred one week before entrance. He was admitted on June 8th, and the operation was appointed for the following Monday. In the mean time he was allowed to be up and about the hospital ward and yard. Two days after his admission be was seized suddenly with a sharp abdominal pain about two hours after supper. He was obliged to go to bed, and was made comfortable with morphine and poultices. There was no distention, but considerable resistance in the right iliac region. There was tenderness on deep pressure, and induration at the point of tenderness. No chill. He had a comfortable night. Temperature and pulse were normal in the morning, and there was slight distention. Tenderness well marked in the right iliac region. Upon making the usual incision at the point of greatest tenderness and resistance, no pus was found, but a gangrenous appendix pointing into the abdominal cavity and attached to a wall of old adhesions that had begun to break down. It was carefully removed, and the peritoneal cavity walled off with gauze. There was free hemorrhage from vessels included in the adhesions, which were tied with difficulty, owing to the soft and boggy condition of the tissues surrounding them. He recovered well from his ether; but shortly after hemorrhage was discovered, which was promptly and efficiently controlled by my assistant, Dr. Cobb. He rallied well, but died on the following day with a rapidly developing acute peritonitis.

In doubtful cases I believe there is less risk in a carefully conducted exploration in the direction of the appendix, enlarging the incision according to the necessities found, than in waiting for a belligerent appendix charged with death-dealing germs to explode, torpedolike, where it can do the greatest harm. To the surgeon accustomed to something more tangible as evidence of the necessity for operation, personal experience alone can guide him safely in delaying action. I have never seen the operation done when the surgeon found less necessity for it than he expected. It is common to find more than an outside inspection would indicate. In the intervals between attacks it is possible to determine the position of the appendix, and from its hardness infer the presence of a foreign body; but I know of no way of settling that question in an acute case without exploration. I believe that if an inflammatory process has once begun in an appendix in the presence of a foreign body, it is likely to be maintained in a milder or stronger degree until the foreign body is removed.

To those familiar with the varying conditions which may cluster about an appendicitis as a centre, and who know the many combinations possible to inflammation, abscess, gangrene and foreign bodies of the appendix—either alone or associated with more or less inflammation of the surrounding tissues, peritonitis (local and general, existing from one to ten days with varying vitality, as shown by pulse and temperature), diarrhea, constipation, vomiting (with or without capacity for

food or stimulants) — the chances of meeting exactly similar cases are so rare as to make absolute rules applicable to all cases futile and impracticable. The combinations are only equalled by those of a Yale safe-lock.

APPENDICITIS; REPORT OF THREE CASES.¹
By J. C. IRISH, M.D., LOWELL, MASS.

THE extreme fatality of cases of fulminating appendicitis, or, in other words, of diffuse septic peritonitis, starting from the appendix, even when operated upon very early, was well shown in the three cases which follow. In each of them the operation was done in less than forty-eight hours after the attack of appendicitis had commenced, that is, after there were any symptoms indicating inflammation of the appendix itself. A mild attack of diarrhea in each instance preceded the general peritoneal infection. They were all examples of diffuse purulent peritonitis.

CASE I. A little girl, five years of age, was well Friday; Friday night and Saturday was apparently suffering from slight gastro-intestinal irritation. No serious difficulty in the abdominal cavity was recognized until Sunday morning. I operated Sunday afternoon. There was general peritonitis, a gangrenous appendix and a large quantity of sero-purulent effusion. The child died eight hours after the operation.

CASE II. Mr. P., Brookline, age fifty-three. Slight attack of diarrhea August 11th. August 12th, severe pain in right iliac region, frequent vomiting of bile, distention of bowels and spasm of abdominal muscles. In short, patient had all the symptoms of acute obstruction. The condition of the right iliac region was greatly obscured by the distention. I operated Sunday morning, less than forty-eight hours after the slightest evidence of appendicitis or any serious trouble in the abdomen commenced. In this case there was a perforated necrosed appendix and a dirty turbulent liquid in the abdominal cavity. Patient lived about four hours after the operation.

four hours after the operation.

CASE III. Mr. T., age forty-two. He had returned from Chicago suffering from a slight attack of diarrhea. On October 30th he was seized with severe pain, vomiting of bile, distention of the bowels, rigidity of abdominal muscles and abolition of intestinal peristalsis. On the evening of that day, twelve hours after the onset of these very serious symptoms, I opened the abdominal cavity, which contained a turbulent serum in small quantity. The intestinal folds were extensively matted together. The patient was in such a condition of collapse that I could not continue the operation to search for the appendix, but had to content myself with simply washing and drainage of the abdomen. The operation was followed by a fatal result in a few hours.

In marked contrast with the above are those cases of perforating appendicitis that have been walled off from the general abdominal cavity. I have operated in fourteen instances in this class within the past two years; twelve have recovered, two have died.

I have operated in two of these cases of recurrent appendicitis in the intervals; and they were as difficult cases as I have ever had. The appendix in each instance was buried in a mass of adhesions, and was

Remarks made at a discussion on Appendicitis before the Surgical Section of the Suffolk District Medical Society, December 23, 1893.

found only after a very long and patient search. In several instances of recurrent appendicitis the operation has been done in the midst of an acute attack. The operation was not more difficult, and the patients went on perfectly well to recovery. I can see no reason why the operation is more dangerous during an attack than in the interval, and it is certainly no more difficult. I do not see, therefore, why very much is gained by the selection of one time rather than the other. The patients themselves certainly more readily submit to an operation during the attack than in the interval. I believe there can be no question that a majority of the cases of undoubted attacks recover without operation, and are not followed by recurrence. Therefore the question whether the operation should be done or not in many instances is a difficult one to answer. Those cases that recover and do not become recurrent are undoubtedly examples of simple inflammation of the appendix without perforation. In any given instance, at the commencement of the affection, there is no way by which one can determine whether or not perforation will take place. The two types of the disease in the beginning resemble each other very closely. We have at first the same spasmodic pain followed immediately by rise of temperature, acceleration of pulse, local point of tenderness and marked plastic effusion in the right iliac region. Now, whenever we can definitely trace the tumor, we know that the peritoneum is walling off the infected region from the rest of the abdominal cavity, whether perforation at that time has taken place or not. These are not very dangerous cases for a little delay; and I believe that when the initiatory pain has been controlled during the first twenty-four hours with opiates, when we cannot avoid their use, a laxative should then be administered and the bowels evacuated as speedily as possible. In this way the distention will be much relieved, and our diagnosis as to the local condition can be much more precisely made. If the case is a non-perforating one, the patient from this time will begin to recover, temperature will diminish, the pain and distention will gradually decrease, and the effusion in the right iliac region will become less distinct.

In regard to the use of laxatives, I always prefer the mercurial to the saline. I am quite sure that in any event it can do no harm. The bowels are more promptly relieved of their distention by the calomel; oftentimes, too, it relieves the pain more completely than morphine. When once the bowels have been thoroughly evacuated, if the patient does not begin to improve, I always infer that I am dealing with a perforating case, and that the earliest possible operation

is imperative.

APPENDICITIS.1

BY J. G. MUMFORD, M.D., BOSTON.

MY experience with appendicitis has been such as to lead me to feel that there are two distinct classes of the disease: those that are curable by our present methods and those that are not. The first class is capable of many subdivisions.

During the past three years I have had to do with the treatment of 145 cases from both classes together. Eight of these were cases of my own. The remaining 137 I saw with Dr. Richardson.

¹ Remarks made at a discussion on appendicitis before the Surgical Section of the Suifolk District Medical Society, December 23, 1893.

Forty of these cases were not operated upon, and recovered. I do not here include such cases as were practically moribund when first seen.

Of the 105 cases which were operated upon 29 died. All but two of these come into my second class—those incapable of cure. They were cases with fully established or beginning septic peritonitis, without adhesions, or with adhesions so slight as to be no barrier against the advance of septic infection. They were given every chance which modern technique affords, and yet the mortality was nearly 100 per cent. Some of these cases were seen as early as the second day, some as late as the tenth, when the surgeon was summoned only after a spreading fatal peritonitis had been set up by the rupture of an abscess.

In connection with these cases I wish to protest against the allegation of those who charge Boston surgeons with timidity in operating. In a large acquaintance with hospital cases, and in my association with Dr. Richardson, I have seen, during the past three years at least, no hesitation about operating for appendicitis except under certain special conditions. There is none of that standing by with poultices, waiting for the "abscess to ripen." Unfortunately there are cases, however, where no amount of zeal for operation can save life. These are the cases in which sudden pain indicating perforation of the appendix, with subsequent fulminating peritonitis, first calls attention to disease. The patient has previously noticed little or no trouble. Such cases can seldom be saved.

There are cases in which slight attacks of pain and tenderness pass unheeded by the patient, until the time comes when the first call of the physician is too late. Then there are cases, I am sorry to say — and they are now rare cases with us — in which the physician himself waits too long before summoning the surgeon.

What some of our enthusiastic neighbors, who save all their cases, would do under these conditions, I confess I am at a loss to understand.

As surgeons, we are called in to render what aid we can under existing conditions. The conditions may be good, or they may be desperate. In the latter case, are we justified in folding our hands and saying that we are too late, that the time for operating has passed? I think not. It is precisely in these cases that the surgeon must shoulder the responsibility, and even at the almost certain risk of damaging his fair statistics, must operate if there seems the most distant chance of saving life.

A word as to the operation of removing the appendix. It has been said to be easy. It very often is not. The little organ may be so distorted, tied down, enfolded, dislocated, deformed, atrophied and buried that its excision becomes one of the most difficult operations in surgery. This statement I have seen proved again and again. It is often true even when the disease is quiescent; and, for my own part, if I should ever come to have my appendix excised, I should prefer to trust myself in the hands of a man who fully realizes, and is prepared to meet, these difficulties.

MEASLES FOR LEPROSY. — A writer in the South African Medical Journal, expresses the belief that leprosy will be cured, not by internal remedies or by external application, but by the introduction into the system of some bacillus inimical to the growth of the leprosy bacillus. This bacillus, he thinks, is to be found in measles.

Medical Progress.

RECENT PROGRESS IN OBSTETRICS.

BY EDWARD REYNOLDS, M.D.

THE TREATMENT OF ASPHYXIA NEONATORUM.

Budin writes an exhaustive paper on the treatment of asphyxia neonatorum, which is especially devoted to emphasizing the importance of aspiration of the traches through the laryngeal tube of Ribemont, and subsequent insufflation by the same tube. Budin has seen two cases in which spontaneous attempts at respiration were followed by cyanosis, asphyxia, and death. In the second case the autopsy demonstrated the presence of a mucous plug in the traches, which was evidently the cause of death. He believes this to be much more common than has been recognized, and that it can be relieved by aspiration.

He discusses at length the various methods of artificial respiration; classifying them under the heads of Under the indirect direct and indirect methods. methods he discusses, especially, the Sylvester and the Schultze methods. He believes that when any such method is applied to an infant in the pale stage of asphyxia, the flaccidity of the muscles of the tongue and throat are likely to permit the pharynx to fall together in such a way as to produce a valvular closure of the air-passages on inspiration. Autopsies made after the unsuccessful use of these methods have repeatedly shown a total absence of air in the lungs.

Under the head of direct methods he considers the mouth to mouth method and the tubes of Chaussier, DePaul, and Ribemont, which latter he considers the best. He believes mouth to mouth insufflation to be frequently insufficient, even in the absence of occlusion of the trachea by mucus, and in that event, worthless. Among tubes he prefers the tube of Ribemont because it is simple and leaves one hand free for compression of the chest. He believes that the insufficient should be done by the lungs of the operator rather than by the rubber bulb. The technique which he recognizes is as follows: The infant should be wrapped in warm clothes, and laid on a table, its shoulders raised by a folded towel, the left index finger should be passed into the pharynx till it recognizes the arytenoids. The tube should then be passed along the palmar surface of the finger by the other hand and will then glide readily into the glottis. Its position is then to be tested by the following methods:

(1) When the finger is passed along the posterior surface of the tube it is in contact with the smooth metal surface of the tube till this is suddenly superseded by the posterior edge of the larynx, through which the tube can, however, be felt.

(2) On rotation of the handle of the tube the larynx undergoes a lateral motion.

(3) On blowing into the tube, if it is in proper position there is no noise, but the chest inflates; if the tube is in the esophagus, there is a gurgle and the abdomen inflates.

(4) When the lungs have been inflated, their elasticity expels the air with a murmur. Nothing of the kind follows when the abdomen has been inflated.

He believes that post-mortems have fully demonstrated the absence of danger of rupture of the alveoli of the infant's lungs in insufflation by the lungs of the

¹ Arch. de Toc. et de Gyn.

operator, and that the slight excess of carbonic acid gas which the air may contain is unimportant. He states that if the proper technique is used the operation is never difficult in the infants at term. [A comparatively small personal experience inclines the reviewer to agree with this statement.

Budin reports three cases in which, after all other methods had failed, aspiration through the tube extracted plugs of mucus and the infant then breathed spontaneously. [A bit of cloth may be placed over the end of the tube to prevent the mucus from enter-

ing the mouth of the operator.]

Bernheim writes a long and interesting scientific article in support of the application of the method of Laborde to infants asphyxiated at birth. discovered accidentally in the case of an adult apparently dead from drowning, that respiration was excited by rhythmical tractions on the tongue. Bernheim thinks that this effect is due to a violent stimulation of the respiratory reflexes by the passive irritation of the normal respiratory excursions of the pharynx and larynx so produced.

The tongue should be seized by catch forceps, or by the finger and thumb through the medium of a dry bit of cloth, drawn strongly out of the mouth and allowed to fall back into its normal position. This manœuvre should be repeated about fifteen times to the minute. Laborde's method has been successful experimentally, upon a number of artificially asphyxiated new-born dogs and calves; clinically, upon a number of adults, and upon ten asphyxiated new-born infants. DeMinicis reports a successful case; Khristoyanaki reports two cases, in one of which he withdrew by aspiration with the tube of Ribemont a large quantity of mucus from the trachea, and subsequently worked for an hour by insufflation through the tube, and by a variety of other methods, without success. He then tried the method of Laborde with most gratify-The infant breathed after a very few ing results. tractions had been made and normal respiration was established within a few minutes. The child was premature, at eight months, weighed less than four pounds, was put into a couveuse and fed with a spoon, and eventually survived. Peronne reports success by the method of Laborde in three apparently desperate cases. Escande, Roux, Aubin, and Gouzon, each report one successful case.

SYMPHYSROTOMY.

Pinard * reports the symphyseotomies of the preceding year at the clinique de Baudelocque,- thirteen in all; two by LePage, two by Varnier, nine by himself; twelve women lived, one died; all the children survived. Four minor accidents occurred during the operations. Twice the anterior vaginal wall was torn into connection with the operative wound during the delivery. In both cases, tamponade of the vagina by iodoform gauze, without suture, resulted in first intention. In one case a vesico-vaginal fistula followed severe bruising of the septum during delivery; but this accident happened in a case in which one sacro-iliac synchrondrosis was completely ossified and the bladder was injured by pressure against the sharp edge of the unvielding symphysis on the rigid side. [It may well be doubted whether this was a proper case for symphy sectomy.] The symphysis healed by first intention;



Nouv, Arch. d' Obst. et de Gyn.. 1893, v. viii, p. 397.
 Annales de Gyn., January, 1894.

the fistula was still waiting for a plastic operation at the time of the report. In one case the recovery was marked by incontinence of urine, without apparent lesion, but this was cured by a few electrical treatments. The patient's locomotion was not interfered with in any case.

In the one fatal case, death occurred on the ninth day from staphylococcus infection, but at the time this patient entered the clinic she had been in labor three days, and in the second stage sixty-six hours: the liquor amnii [vaginal discharge?] was green, thick, and extremely offensive. Pinard thought the mother seriously septic at the time of her entrance. He thought that the septic condition of the uterus absolutely ruled out the Cæsarean section, that symphyseotomy would save the child, and would not essentially alter the already serious prognosis for the mother. He considers the operation a success, in spite of the death of the mother, because it was done, practically, in the interest of the child, and it survived.

He questions the advisability of applying the forceps, after symphyseotomy, to unengaged heads, and in future intends to leave such cases to natural labor, for a time at least.

The conclusions which he draws from his experience are; (1) Symphyseotomy at term should be preferred to an induction of labor, in all cases in which the size of the pelvis will permit the passage of the head after symphyseotomy. (2) In the interests of the child symphyseotomy should be preferred to forceps, either high or low, in all cases in which arrest is due to osseous resistance. (3) Craniotomy to the living child is never justifiable. (4) He advocates the use of symphyseotomy whenever the well-flexed [anterior] occiput does not engage at the brim and when calculation shows that symphyseotomy would permit the passage of the head. (6) He recommends Porro's operation whenever the degree of contraction excludes symphyseotomy.

[Pinard's conclusions are certainly far more radical than even his experience warrants; but the complete experience of a single clinic is of far more value than statistical collections of scattered successful cases, which may or may not be balanced by unpublished fatal cases; and the publication of such results as these of the Baudelocque clinic, certainly places symphyseotomy upon the footing of a successful operation, which, at least in the hands of skilled operators, has probably a large field of value.]

THE USE OF LYSOL.

Rossa ' reports the results of the use of lysol in Rokitansky's clinic for six months. He describes it as an exceedingly powerful antiseptic, and but slightly toxic; though he admits the necessity of precautions, since several cases of poisoning have been reported by other observers.

Lysol is a yellow, brownish fluid of not unpleasant odor, and freely soluble in water; in which it forms a very slightly turbid, greenish-brown solution. The appearance of the solution closely resembles that of a strong solution of soap in water, and like the latter it forms foamy suds on being agitated. It should be used in strengths of from one to two per cent. It is highly cleansative, dissolves vaginal mucus, and leaves behind it a slippery surface, all of which are great advantages for obstetrical or gynecological work. It

4 Wien. Klin. Woch., 1893, No. 24.

does not roughen the hands, unless in very strong solutions. Rubber catheters and drainage-tubes are roughened by long contact with a lysol solution. It is highly irritative to the bladder, and produces cystitis in solutions of even half of one per cent. Rossa reports a decreased mortality and febrility, since lysol was substituted for corrosive sublimate, in the Rokitansky clinic.

DERMOID TUMOR IN THE PELVIS.

Fischer 5 reports the case of a IV-para, thirty-seven years old, whose labor was obstructed by the presence of a dermoid tumor in the pelvis. The lower uterine segment was tense during the pains, and the retraction ring could be felt by palpation at the level of the umbilicus. The posterior vaginal cul-de-sac was distended by a smooth, elastic, rounded, indistinctly fluctuating tumor. The os was high and tonically contracted. The bladder was much distended. No fetal heart could be heard. Aspiration of the tumor through the cul-de-sac yielded a curdy fluid mixed with hair. Cæsarean section was then performed, and the patient was discharged well on the tenth day. Two months later she returned, complaining of much pain and swelling in the abdomen. The uterus was found much enlarged and fixed by adhesions; on the right side of the pelvis there was an adherent tumor of the size of a child's head. The abdomen was reopened, and a large pus cavity containing hair was thoroughly drained, and packed with gauze. The patient recovered, but was afflicted by a long and troublesome sinus which remained open till more hair escaped. In this case the contents of the tumor were more fluid and the Cæsarean section was not necessary. The subsequent history was almost exactly similar to Fischer's case, except that the patient developed a pulmonary tuberculosis, during the prolonged suppurstion. The result of this case is interesting in comparison with the case of Dr. A. F. King, "Transactions of the American Gynecological Society," 1893, p. 217.

OBSTETRIC SEPTICEMIA.

Bumm, in a full and interesting article upon obstetric septicemia, divides the cases into sepsis of vaginal or cervical origin, putrid intoxication from decomposition of retained secundines, and true constitutional septicemia due to infection by streptococci, staphylococci, or other less common organisms.

The first class of cases he believes to be comparatively rare, usually strictly localized, and easily treated.
In the second class of case he has found that the
early removal of the secundines, followed by abundant
flushing of the uterine cavity with boiled water, always
yields promptly satisfactory results; but that after a
few days have elapsed without relief, a thorough curetting of the uterine cavity with a sharp curette, and the
subsequent use of fixed antiseptics within the uterine
cavity, is the only treatment which is likely to be suc-

In the third class he believes that local treatment may sometimes be useful but is seldom of great value, and that the results of the infection depend wholly on the original virulence of the infecting organisms. They are absorbed into the general circulation with great rapidity; he has demonstrated them in the periuterine tissues of animals, within a few hours after experimental infections. If they are of low virulence they,

Präge, Med. Woch., 1893, p. 285.
 Centralblatt. Fü., 1893, No. 42.

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however, tend to localize themselves in the pelvis, or in other portions of the body, and with active surgical treatment of the resulting pus collections the patients may do well. If the bacteria are of high virulence they do not tend to localize, and the patients die in spite of treatment.

He highly recommends the continued use of the ergot of rye, from the time when the infection is first diagnosed. Microscopical examinations of infected uteri have shown that the bacteria are most abundant in spots where the tissue is loose, and the intercellular spaces large; on theoretical grounds, then, the extension of the infection should be least in patients whose uteri are in a state of tonic contraction. He thinks that the limitation of obstetric infection, which he claims is accomplished by the use of ergot, is analogous to the limitation of erysipelas by contractile collodium; and he affirms its value not only upon the foregoing theoretical grounds, but as the result of his large clinical experience.

Reports of Societies.

HARVARD MEDICAL ALUMNI ASSOCIATION.

Business Meeting. — Report on the Condition OF THE MEDICAL SCHOOL.

THE annual meeting of the Harvard Medical Alumni Association was held at the Harvard Medical School, Boston, on Tuesday, June 26, 1894, at 12 o'clock, the President, Dr. J. R. CHADWICK, in the chair. There were present about eighty members.

The Secretary's Report was read and adopted. After giving a synopsis of the action of the Council during the year, it stated that there are now 1,132 members of the Association, and that eighteen members had died since the last annual meeting.

The Treasurer's Report was read by Dr. Walter Ela, of Cambridge, the Treasurer. The receipts, including the balance of last year, were \$2,648.75; and the expenses have been such that there is a balance on hand of \$1,536.83. That balance is made up of \$600 Life Membership Fund, a General Fund of \$308.56 which is in the Savings Bank, as is the Life Membership Fund, and \$628.27 which is on deposit with the Old Colony Trust Company.

The reports were adopted.

The Committee on Nominations, Drs. Folsom, Coolidge, Farlow, Galloupe and Broughton, presented the following list of officers, who were elected to serve for three years, as follows:

President: George Brune Shattuck, of Boston, Mass. Treasurer: Walter Ela, of Cambridge, Mass. Vice-Presidents: Zabdiel Boylston Adams, of Framingham, Mass.; Israel Thorndike Dana, of Portland, Me.; Richard Henry Derby, of New York City; Samuel Augustus Fiske, of Denver, Col.; John Green, of St. Louis, Mo.; Henry Hun, of Albany, N. Y.; Horace George Miller, of Providence, R. I.; John Lombard Robinson, of Manchester, N. H.; John Brooks Wheeler, of Burlington, Vt.; William Scollay Whitwell, of San Francisco, Cal. Councillors: Theodore Frelinghuysen Breck, of Springfield, Mass.; James Read Chadwick, of Boston, Mass.; Charles Ellery Stedman, of Dorchester, Mass.

Council for honorary membership, and were duly elected: Dr. James K. Paddock, of Pittsfield; Professor Howell, of Johns Hopkins University; and Dr. Wm. T. Porter, Assistant Professor of Physiology at the Harvard Medical School.

The Association then adjourned to meet at dinner at the Hotel Vendome at 1 P. M.

Dr. Samuel W. Langmaid, Chairman of the Committee on the Medical School, presented a

REPORT ON THE CONDITION OF THE MEDICAL SCHOOL.

The committee this year has to report steady progress and improvement in the work of the school and in the methods of instruction. The three years' course may now be regarded as a thing of the past. The last class graduates this year, and the requirement of four full years of medical study for the Harvard degree of M.D. is fully established. The first of the required four-years' classes has just completed its second year, so that a year hence there will be no regular graduating class except the last voluntary fourth class. This lengthening of the required course of study makes necessary a system of changes in some of the courses and their arrangement, the whole of which has not yet gone into effect.

Except to congratulate the alumni upon the death(?) of the three years' course, the committee do not intend to repeat what has already been said before on the re-quirements of four years. The fear that the number of students would be much diminished by its introduction has been proved unfounded. A new danger, that the general financial depression will reduce the number of students materially, has arisen. We can hope and trust that this is no more likely to be fulfilled than the other.

Last year the committee spoke of the advisability of increasing the requirements for admission, looking forward to a time in the future when it would be possible to require the degree of A.B., or its equivalent, for admission to the Medical School. A step in this direction has already been taken by the Faculty, by voting that after June, 1896, a new set of requirements will be demanded. Six subjects will then be required: English, Latin, physics, chemistry, either French or German, and either algebra, geometry or botany. The amount of knowledge required in these subjects will be considerably greater than that now required.

The number of college graduates in recent classes has been diminishing. In the last entering class it is unusually low, less than 25 per cent. The constantly increasing age at which young men enter college, the necessity of spending eight years in obtaining the degrees of A.B. and M.D., and the great desirability of a year's service in a hospital at the end of the medical course takes so much time that a man may be twentyseven or twenty-eight years old before beginning the practice of medicine.

In connection with the Pan-American Congress held last autumn in Washington, it is interesting to note that a section was established on Medical Pedagogics, in which several subjects connected with teaching were discussed. This shows an increasing appreciation of the importance of studying the best methods of teach-The formation of such sections in connection with medical societies and congresses cannot fail to be The demonstration beof benefit to medical schools. The following names were recommended by the fore that congress of what our school was doing was very gratifying, and it may well be considered one of the aims of such a school as ours to teach other institutions how to teach. In this connection the exhibit of the Harvard Medical School at the World's Fair in Chicago, was a revelation to those who studied it carefully, of the enormous amount of work which is constantly being done in its different departments.

men, not including those connected with the Summer School. The number of students is 446, and the number of courses prescribed for undergraduate students about 65, not including a large number of clinical exercises. The summer courses of instruction have largely increased, the number offered for the coming summer being 57. In addition to the teaching of undergraduates, the opportunities offered to graduates in special courses and for original investigation in different laboratories are constantly increasing, and already take the place of what many physicians in the past have sought in Europe.

During the past year a system of weekly lectures in the Medical School has been inaugurated and very successfully carried out. Several gentlemen have given one or more lectures on subjects in which they are authorities, to those of the medical profession who chose to avail themselves of them. Too much cannot be said in praise of this undertaking, and it is to be hoped that it will become a regular feature in the educational work of the school.

The Faculty has, as far as possible, encouraged the giving out of special cases in different departments to individual students; the patient to be visited at his home and a general supervision kept of the progress and care of the case. In this way a student becomes acquainted with disease in a different and much more thorough manner than is possible in an out-patient clinic alone, and a further development of such a system is to be hoped for and encouraged.

Without attempting to go into the details of all the improvements and additions in the different departments and laboratories, we may mention a few to show the constant advance and the care which is being taken to maintain the high standards. With the four years' course, instruction is provided in clinical medicine for the students of the second, third and fourth classes separately, beginning in the second year with simple subjects and cases and advancing in the latter years to the more complex. In the fourth year particular attention will be devoted to clinical therapeutics.

The work of the pathological department of the school has been much assisted by the gift of \$1,000 yearly from Miss Ellis. This has been devoted to the subject of pathological bacteriology. During the year original investigations have been pursued in the pathology of infectious diseases, the results of which will shortly be published. The efficiency of this department in the school will also be increased by the erection of a pathological laboratory at the City Hospital. This laboratory is being built on the most approved plan, and will be complete in all its appointments.

During the coming year special courses on the pathology of infectious diseases, on the pathology of the nervous system and on subjects in surgical pathology, consisting chiefly of laboratory work, will be given by some of the assistants in the department. The course in pathological histology has been made obligatory instead of optional as heretofore, and the change has been found to be a good one.

The progress which has been made in the department of the Medical School devoted to children in the last two years has been marked by great advances. Not only has it been made one of the leading features of the school's new work, through the establishment of a full professorship and a required examination for the Harvard degree by the whole class, but something of The annual catalogue shows a teaching staff of 86 far greater value to the medical world has emanated directly from this department. An absolutely new era in the great subject of infant feeding has been established by means of a thoroughly equipped milklaboratory, where physician's prescriptions can be sent and the different elements of milk combined in any proportions which may be ordered. This laboratory is the first of its kind that has appeared in the world.

In anatomy there has been given an excellent course on the brain, which has been demonstrated to small sections of the class. This system of demonstrations to sections is to be further developed next year, and the course will be made both as thorough and as practical as possible.

The principal investigations carried on in the physiological laboratory during the past year were: A study of the course of respiratory impulses in the cervical cord; a study of the circulation time in organs by new and improved methods; and a study of the influence of continued nerve stimulation on the rate of transmission of the nerve impulse.

This year, for the first time, the subject of general chemistry has been entirely taken out of the school, and made a requirement for admission. The course formerly known as medical chemistry has been subdivided into medical chemistry proper and clinical chemistry, the latter including the diagnosis of urine and toxicology.

During the past year the most important work in the museum has been the commencement of an index card-catalogue. And as preliminary to this the specimens have all to be renumbered, since they have come from two or three collections, each with its own number. It is hoped that the cataloguing proper can begin early in the coming year. As the collection is essentially one for teaching, the specimens which are mostly used in one department are best arranged by themselves. And whenever any of the instructors have desired it, cases have been set apart for them. During the last year the nucleus of a collection especially for orthopedic surgery and diseases of children has been begun. The museum has been open daily, except Sunday, during the week to students and graduates, and an increasing use of the collection has been noted.

The working space in the bacteriological laboratory has been entirely taken up by students during the past year. Nine graduates have been able to avail themselves of the opportunities for study and original investigation in bacteriology. Others had to be refused because there was no room for them. The discoveries which have been made by medical men working in the laboratory, have already proved to be most important; and it is to be hoped that the money, without which such lines of study cannot be pursued, may not be lacking.

(To be continued.)

A CRIMINAL lawyer of Cincinnati boasts that he is able at a glance to tell a criminal from an innocent person. Clearly this is just the kind of man required for lynch law practice.

AMERICAN PEDIATRIC SOCIETY.

SIXTH ANNUAL MEETING, WASHINGTON, D. C., MAY 29, JUNE 1, 1894.

FIRST DAY. - TUESDAY.

THE meeting was called to order by the First Vice-President, Dr. F. Forchheimer, of Cincinnati, O. DR. B. K. RACHFORD, of Newport, Ky., read a paper entitled

THE INFLUENCE OF VENOUS CONGESTION ON THE SPINAL REFLEX CENTRES.

He said there were three important blood changes etiologically related to the neuroses of childhood, namely: (1) toxines in the blood; (2) simple anemia, acute and chronic; and (8) venous congestion, acute and chronic. There were other toxines in the blood of bacterial origin; thus, paroxanthine, a poisonous leucomaine of the uric-acid group was accountable for many symptoms formerly attributed to uric acid itself. He said that the best way to study the influence of simple anemia on the nervous centres in an animal was by repeated bleeding or by starvation, or by both combined. Following out this line of research, he had been led to suspect that the blood changes in scrofula, malaria, rheumatism, etc., might not be due simply to anemia, but that the blood might also contain effete and poisonous products which would also tend to keep the nervous system in a state of chronic irritability. This opinion had been still further confirmed by experiments in ligating the vena cava in rabbits. reflex phenomena produced by starvation was very slight indeed compared with those produced by venous congestion or arterial anemia. It might be concluded, therefore, that venous congestion and arterial anemia did not act solely by causing malnutrition, but that other factors, such as the retention of effete products, should by irritation of the nervous system act as additional factors. It seemed probable that here we might find an explanation of the manner in which endocarditis and pericarditis produce chorea and other nervous affections in children by the retardation of the capillary circulation in the nerve centres.

DR. T. M. ROTCH, of Boston, said that from a clinical standpoint he could indorse the views expressed in the paper. All must have noticed clinically the relation between a feeble circulation and the existence of nervous disorders. He had been especially interested in facts brought out regarding the influence of endocarditis in chorea.

Dr. J. HENRY FRUITNIGHT, of New York City, said that it was very important to remember that malnutrition and its phenomena were not directly the result of anemia, but rather due to a toxine following anemia.

Dr. AUGUSTUS CAILLE, of New York City, read a paper on

TONSILLOTOMY FOLLOWED BY DIPHTHERIA AND CROUP.

He reported the case of a boy, four years of age, who had been brought to him for the removal of hypertrophied tonsils. At the urgent request of the parents, who lived some distance from New York, he had removed the tonsils without his usual prophylactic treatment. The parents had been instructed to use Labarraque's solution; and as the boy was unwilling

of potassium chlorate internally. The next day the boy was violently ill, and both tonsils were found to be covered with a pseudo-membrane. A culture from the throat showed the presence of diphtheria bacilli and streptococci. He was given internally the bi-chloride of mercury. Within twenty-four hours the larynx became involved and it was necessary to resort to intubation. The boy ultimately recovered, and three weeks afterwards the adenoid vegetations were removed from the pharynx. The author said that the naso-pharyngeal toilet was indicated in catarrh, pertussis, scarlatina and measles, and before the removal of adenoids and vegetation. Mild antiseptic washes should be used. It was advisable to ascertain previously the presence or absence of diphtheria bacilli before operation on the tonsils.

DR. A. JACOBI, of New York City, said that for the past thirty years he had been teaching this doctrine, that during the presence of diphtheria in a community, no wound should be made and no tonsil exsected if the operation could possibly be postponed. He had many, many times seen the wound of exsected tonsils covered with a thick pseudo-membrane and in many instances this had been followed by general diphtheria. Not-withstanding his repeated warnings on this subject, few physicians paid any attention to it, and few parents knew anything about it.

DR. H. KOPLIK, of New York City, said that it was surprising how very many tonsils harbored the Löffler bacilli in the very depths of the lacunæ. It was a very simple matter to take a culture from the throat before resorting to tonsillotomy and thus be sure of the presence or absence of the diphtheria bacilli. If diphtheria resulted after tonsillotomy, we might be sure that the diphtheria was in the tonsil at the time of the operation, providing that the patient had not been subsequently exposed to the disease in some other way. After the diphtheria bacilli had remained in the lacunæ of the tonsil for a period of several weeks, they became converted into non-virulent bacilli.

DR. DILLON BROWN, of New York City, said that he fully agreed with the author of the paper as to the importance and necessity of using antiseptic lotions in naso-pharyngeal operations, both before and after the operation; yet it should be said that in a certain proportion of cases, owing to the objections of the parents and children, this method of treatment was extremely difficult to carry out. He proposed under such circumstances the use of sublimed calomel.

Dr. F. HUBER, of New York City, then read a paper on

CONGENITAL CONSTIPATION.

A case was reported of a boy, five weeks of age, who since birth had been troubled with constipation and colic. When first seen by the author he was suffering great pain, straining and kicking. The abdomen was swollen and tympanitic and the child had been vomiting for two days. The temperature was 102° F. By a process of elimination the diagnosis of acute intestinal obstruction since birth was arrived at. It was due to an impaction of feces in the reduplication of the sigmoid flexure of the colon, a condition frequently misunderstood or entirely overlooked. While in many cases it was a very trivial matter, still it was not uncommon for it to lead to serious illness and even to seriously jeopardize life. In infancy, the descending to gargle his throat, he had been given frequent doses portion of the colon was proportionately long, and by

being crowded down into the narrow pelvis it formed a number of curvatures instead of one sigmoid flexure. The treatment consisted in giving high rectal injections until the proper relation had been established between the colon and the sigmoid flexure. It was, of course, often necessary to continue the treatment for years.

DR. W. L. STOWELL, of New York City, said that he had used with satisfaction enemata consisting of oxgall and sweet oil.

Dr. Fruitnight remarked that, as many of these cases of constipation were due to an unusual dryness of the feces, the free administration of water should not be neglected.

DR. FORCHHEIMER indorsed this suggestion of the last speaker, and said that much more could be accomplished in children by the administration of water than

Dr. J. C. Wilson, of Philadelphia, read a paper entitled

A CASE OF MALIGNANT MEASLES.

The patient was a strong man, thirty-seven years of age, whose children had just recovered from measles. After feeling ill for two or three days, the skin became covered with numerous petechiæ, from one to eight millimetres in diameter, mostly oval in shape. There were no hemorrhages from the mucous surfaces. His condition became very much worse soon after the appearance of this eruption. His temperature continued to rise; and shortly before his death, three days later, it reached 105.6°. No autopsy was permitted. During his illness, a specimen of blood was taken from a large petechia and examined by Dr. A. C. Abbott, but neither bacteria or other form of parasite were discovered. The direct diagnosis of measles, the speaker said, rested upon the exposure, the faint and limited, but distinct maculo-vascular rash, the crescentic arrangement of the petechiæ and the febrile movement.

In the course of the discussion of this paper, the question was raised as to the occurrence of measles a second or third time in the same individual. Drs. ROTCH, STOWELL and FORCHHEIMER expressed themselves as believing firmly in the occurrence of measles more than once in the same individual; whereas Dr. A. Seibert said that in an extensive tenement-house practice, and in his own private practice, he had never made the diagnosis of measles twice in the same child. He therefore thought that it was a decidedly rare occurrence.

Dr. Wilson, in closing the discussion, said that he had had associated with him in consultation over the case he had reported, Drs. Heffer and DaCosta, and they had all agreed as to the diagnosis.

SECOND DAY. - WEDNESDAY.

THE ETIOLOGY, PREVENTION AND TREATMENT OF RICKETS.

As part of the discussion on this subject, Dr. IRVING N. Snow, of Buffalo, read a paper on

THE INFLUENCE OF RACE, ESPECIALLY THE ITALIAN

He said that in his experience rickets had been six times more frequent among the Italians than among other races, and he attributed this to the great change of climate and environment to which they had been subjected. He said that rickets was seldom developed among the natives of Southern Italy, Egypt, and India, to the value of drugs in the treatment of rickets, that

and explained this fact by saying that the out-door life, the bright sunshine, tended to prevent its development.

DR. GEORGE N. ACKER, of Washington, D. C., followed with remarks on the influence of the negro race. He said that the negro race was undergoing serious decay, as a result of change of environment since their emancipation from slavery. Since they had been free, they had become shiftless; they lived in entire disregard of all sanitary regulations and requirements, and were often intemperate. The negroes were often weaned at a very early age to allow of their mothers going out to work, and at best they had but very little attention and much improper food. As a result of this general inattention, they were liable to develop pulmonary disorders between the sixth and eighteenth months of life; and diseases of the respiratory organs, by lowering the vitality, tended to the production of rickets. In his experience, cranio-tabes was rare in the negro; and as negroes have less susceptible nervous systems than whites, they were less liable to nervous affections. When these rickety children were placed in more favorable surroundings, the disease usually yielded readily to treatment.

DR. C. W. TOWNSEND, of Boston, then reported

A CASE OF CONGENITAL RICKETS.

The subject of the report was a male child, born prematurely of healthy parents, but wretchedly poor. There was no history of syphilis. The evidence of rickets was very marked and characteristic. There were even fractures present, due to the extreme brittleness of the bones, usually a late phase in the rachitic process, and consequently must have been produced by muscular action within the uterus. The child died on the ninth day. There was no autopsy

Dr. J. C. GRIFFITH, of Philadelphia, remarked that he had not been able to observe any difference in the causation of rickets in the colored and in the white race. It seemed to him reasonable to suppose that at least the colored children of Philadelphia should have

become acclimated by this time.

Dr. L. Emmet Holt, of New York City, said that he had been led to about the same conclusions as those arrived at by Dr. Snow. There could be no question about the predisposition of the negroes and Italians to rickets.

Dr. J. Henry Fruitnight, of New York City, said that it would seem that the nations of continental Europe were more prone to this disease than were the inhabitants of the British Islands. He also mentioned a case of congenital rickets which he had seen, thus making four cases on record in this country.

Dr. A. Seibert, of New York City, said that since his attention had been called to cranio-tabes, he had found that it was present in the large majority of cases of rickets. It was a condition to be especially looked for in cases giving a history of eclampsia.

Dr. Samuel S. Adams, of Washington, D. C., said that he agreed with the author of the paper as to the etiology of rickets, that is, that it was due to improper feeding.

Dr. J. E. WINTERS, of New York City, said that climate affected the question of the production chiefly through its influence over digestion and assimilation. He had yet to see a tuberculous child become rickely.

DR. KOPLIK, of New York City, said, with reference

he thought if nascent phosphorus was given in a daily dose of a hundred-and-twentieth of a grain, and this treatment were continued conscientiously, encouraging results would follow.

Dr. Acker, in closing the discussion, said that he believed if the negro were placed under proper surroundings the rickets would be cured without resort to any drug.

Dr. A. Seibert, of New York City, read a paper entitled

AN AID TO THE STERILIZATION OF MILK IN ARTI-FICIAL INFANT FEEDING.

The method he advocated consisted briefly in filtering out the gross filth of milk by passing it through a half-inch layer of moistened and compressed absorbent cotton. He said that bacteriological experiments had been made for him by Dr. Otto Kiliano, of New York, and these had shown that by such filtration the germinating capacity of the milk had been considerably diminished. When the cotton was previously moistened, it was found roughly that about seven-eighths of the germs contained in the milk were removed by this process of filtration.

Dr. J. HENRY FRUITNIGHT, of New York City, read a paper entitled

INFANTILE SCURVY, ESPECIALLY ITS DIFFERENTIAL DIAGNOSIS.

After reporting a case of this kind, he stated that it was his opinion that the condition of malnutrition present in scorbutus must exert a special influence on the blood-versels. It was an error to suppose that scurvy never occurred in breast-fed children. The diagnosis of scurvy was made by the swelling and tenderness of the ends of the femur, the swollen and spongy condition of the gum, and by the rapid and complete cure resulting from anti-scorbutic treatment. The condition was sometimes confounded with acute rheumatism. In scurvy, the joints were white, and tense, but not puffy; in rheumatism, the joints were red and puffy, and the tenderness was localized at certain points. In scurvy there was no local elevation of temperature. If joint symptoms alone were present and were not very marked, the therapeutic test would decide the question of diagnosis. In conclusion, he would say that scurvy was the result of a faulty nutrition which led to deviation of the normal chemical constitution of the blood, probably deficiency in its alkalinity. It was associated with changes in the blood-vessels. The bone lesions, the spongy condition ot the gums, and the petechiæ form the triad of symptoms. The symptoms developed first in the lower extremities, then in the gum, and lastly the hemorrhages and extravasations appeared. Under proper dietetic treatment the course of the disease was usually favorable.

(To be continued.)

THE Swiss Statistical Bureau gives the following facts as to the medical profession in Switzerland; In 1890, the total number of medical practitioners was 1,580, being a proportion of 5.2 per 10,000 of the population; in 1891, the number was 1,557, or 5.3; and in 1893, 1,634, or 5.5 per 10,000 inhabitants. In 1893, the total number of doctors was 1,656, or 5.5 per 10,000 of population.

Recent Literature.

A Manual of Diseases of the Nervous System. By W. R. Gowers, M.D., F.R.C.P., F.R.S. Second edition, revised and enlarged. Volume II: Diseases of the Brain and Cranial Nerves, General and Functional Diseases of the Nervous System. 8vo, pp. xvi, 1069, with 182 illustrations. Philadelphia: P. Blakiston, Son & Co. 1893.

The completion of the second edition of this great work has been anticipated with interest by all who were familiar with the previous edition. The changes have not been so great as in the first volume, the additions amounting to only about a hundred pages, but evidences of revision and addition are manifested throughout the work. Only two entirely new chapters have been added - on chronic adult chores, and astasisabasia, but several other sections are practically rewritten and greatly enlarged. The arrangement is the same; something over half the book is taken up with the consideration of the anatomy and functions of the brain, the diseases of the brain, the localization of disease, the diseases of the meninges, and the organic diseases and degenerations. The rest of the book discusses the general and functional diseases.

It becomes somewhat monotonous to repeat what has been said of the first edition of the work and of the previous volume, that it is the best and most complete treatise on the subject in any language, but it is merely the statement of a very evident fact. The enormous amount of research and erudition displayed in these two volumes is almost appalling, and many of the chapters are in themselves complete monographs in which may be found not only a summing up of the latest facts, but the results of an enormous personal clinical experience.

It view of all this criticism might seem not only uncalled for but unjust. Nevertheless a word or two of criticism seems necessary. We have finished this second volume with a distinct feeling of disappointment. Admirable as it is in many ways, the last half of it more especially falls short of the standard set by the first volume; it is less complete, and less fully abreast of our present knowledge. It may seem absurd in a work of over two thousand pages to speak of omissions, but serious omissions exist. Acromegaly and myxedema have as much right to a place in such a work as exophthalmic goitre; paretic dementia might well be considered, and, in view of the author's Lettsomian lectures, a special chapter on syphilis of the nervous system might not be out of place; the traumatic neuroses deserve some sort of notice; and when affections like tetanoid chorea are described at length (based on a single case), Gilles de la Tourette's maladie des tics and Gerlier's disease deserve something better than a foot-note, especially when the latter much-discussed affection is incorrectly described.

The section on the general and functional diseases is, on the whole, the most disappointing feature of the book, and in many of its chapters it falls far below the rest. In many cases there is, in comparison with the rest of the work, an astonishing failure to note the results recent work. Too little weight is laid on the results of recent autopsies on paralysis agitans; in the effort to prove that neuralgia is due to central disturbances, the changes in the nerves in tic douloureux found by Putnam, Dana and Rose are neglected. The descrip-

tion of astasia-abasia is utterly at variance with Blocq's definition or the symptoms described in the reported cases. By far the worst chapters are those on hysteria and neurasthenia. Much has been added in this edition from Richer's famous work, but the later work of Charcot and the researches of Guinon, Pitres, Janet and Gilles de la Tourette are wholly neglected. Hypnotism receives no recognition, beyond the description of Charcot's three stages, and the influence of suggestion is ignored. Neurasthenia receives five pages of consideration, instead of the scanty half-page in the first edition, but even yet Gowers is unwilling to assign to it any place in nosology, and the discussion is wholly inadequate. There is, moreover, here and there, something too much of diffuseness and of theorizing which might well be condensed or omitted.

These defects, however, are but minor flaws, and the work as a whole remains the leading work on the subject, indispensable to every student.

Lectures on Genito-Urinary Diseases. By J. C. OGILVIE WILL, M.D., C.M., F.R.S.E., etc. London: The Scientific Press (limited). 1894.

Under the above title the author presents six lectures on the following subjects: (1) "Urethral and Catheter Fever." (2) "Treatment of Retention of Urine." (3) "Gleet and its Treatment." (4) "On Varicocele." (5) "On Hydrocele. (6) "The Treatment of Syphilis."

These lectures are instructive, practical talks to students, containing much sound advice, and will serve as safe guides in practice. The best methods of treating gleet and the various phases of syphilis are especially fully and clearly detailed; and the appendix contains a number of prescriptions that will be found useful in the treatment of special manifestations of the latter disease. The chapter on the treatment of gleet has an excellent description of the endoscope and its use.

In the first lecture we note that the author makes an emphatic distinction between urethral and catheter fever, the former term being used to designate the "irritative" fever which sometimes follows even the geutlest instrumental examination of the urethra alone, while the latter is applied to the febrile and other symptoms occurring in connection with the emptying by a catheter of a distended bladder, such as is so frequently seen in cases of prostatic hypertrophy. The phenomena of urethral fever are believed by the author to be due to "disordered reflex action"; those of catheter fever to the introduction into the bladder of putrefactive germs.

Lehrbuch der Histologie. Berlin: S. Karger. 1894.

Dr. Rawitz, Privat-docent at the University of Berlin, has published a meritorious manual of histology, which in 284 pages, illustrated with 204 engravings, presents a satisfactory outline of the science in a manner adapted to the requirements of the medical student.

His descriptions are clear, well arranged, and in the main accurate. We miss an adequate account of the uterus, and note that the description of the course of the renal tubules is incorrect. The illustrations are rather coarse "process" cuts, and quite diagrammatic. No directions for the technical methods are included; for these the author refers to another manual published by himself some years ago.

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LEGISLATION RELATING TO MEDICAL MAT-TERS IN MASSACHUSETTS.

THE Massachusetts State Legislature of 1894 has passed several laws of interest to the medical profession of the State. The most important of these is the law requiring the registration of all physicians, the text of which has already been published.¹

In spite of protests by opponents of vaccination, a law was passed requiring parents and guardians to have their children or wards vaccinated before they are two years old, under penalty of five dollars' fine for each subsequent year of neglect. As a compromise with the opponents of the bill, it is provided that all children who obtain a certificate signed by a regular practising physician that they are unfit subjects for vaccination, shall be exempt from the provisions of this act, and of the act requiring school children to be vaccinated. The board of health in any city or town shall enforce the vaccination and re-vaccination of all the inhabitants whenever in their opinion the public health requires it, and shall furnish the means of free vaccination. Manufacturing companies and officers of institutions supported or aided by the State, shall cause the inmates to be vaccinated whenever in the opinion of the board of health the health of the inmates or the public safety requires such action. All vaccine institutions in the State are placed under the supervision of the State Board of Health.

The laws relating to contagious diseases among domestic animals are codified and consolidated. General supervision and the making of regulations is given to the State Board of Cattle Commissioners, the number of the board being increased to five. Also local boards of health may take measures necessary to suppress or prevent contagion in their districts. The mayors and aldermen of cities, and the selectmen of towns are required to appoint one or more inspectors of animals and provisions. It is the duty of these inspectors to

¹ See page 426 of the Journal of April 26, 1894.

examine all neat-cattle, and in case of suspicion other animals; to supervise all slaughtering; to quarantine suspected animals, and to seize diseased meat. They may also, and must if so ordered, inspect all meats, fish, vegetables, produce, fruits or other provisions. All slaughter-houses, and establishments manufacturing foods from meat, must be licensed by the city or town, and be supervised by the inspectors.

A law against vivisection provides that no teacher in any public school shall, in the presence of any scholar, practice vivisection, nor exhibit any animal upon which vivisection has been practised. Dissection of dead animals or of any portions thereof, in the public schools, shall in no instance be for the purpose of exhibition, but shall be confined to the class-room and to the presence of pupils engaged in the study to be illustrated by such dissection.

A law regulating the employment of labor includes a provision, that every factory in which five or more persons are employed, and every factory, workshop, mercantile or other establishment or office in which two or more children, young persons or women are employed, shall be kept in a cleanly state, and shall be provided with a sufficient number of water-closets or privies; and wherever two or more male persons and two or more female persons are employed together, a sufficient number of separate and distinct water-closets or privies shall be provided for the use of each sex. The same law provides for proper ventilation of workshops, and for the inspection of places where clothing is made.

In any city in which no suitable hospital accommodations have been provided for the care and treatment of persons suffering from contagious diseases, the board of health may address a communication to the mayor, stating that in the opinion of the board the safety of the inhabitants of the city demands that suitable hospital accommodations should be provided for the reception and treatment of persons suffering from such diseases, other than small-pox and those of a venereal nature. The mayor shall transmit such communication to the city council, and the city council shall order such hospital accommodations to be provided, and shall make the necessary appropriations therefor. No discrimination shall be made against the treatment of venereal diseases in the out-patient department of any general hospital supported by taxation in any city where special hospitals, excluding hospitals connected with penal institutions, are not provided for the treatment of such diseases at public expense, and said hospital may establish a separate ward for the treatment of such cases.

Every town in the State may elect a board of health of three persons; if it does not do so, the selectmen of the town shall constitute the board of health. In cities and towns of over five thousand inhabitants one member of the board must be a physician.

The licensing of plumbers and the inspection of plumbing is put more or less under control of boards of health.

The Boston City Board of Health may require private alleyways or passages to be cleaned or paved where they consider it expedient.

Other acts of local interest or amendments of old laws add to the list of subjects connected with public health which our late legislature has left us.

THE WOUND OF PRESIDENT CARNOT.

THE official report of the wound of the late President of the French Republic, and of the surgical management of the case by Dr. A. Poncet, assisted by Drs. Lacassagne, Coutagne, Ollier, Lépine and others, has been published.

M. Carnot was assassinated at 9.80 P. M., on the 24th of June. The poniard was forcibly thrust below the right false ribs, an inch outside of the xiphoid appendix, completely dividing the corresponding costal cartilage; it penetrated the left lobe of the liver near the suspensory ligament, perforating the organ from left to right and from above downwards, wounding in its course the portal vein in two places. The depth of the liver wound was from three to four inches, and a severe intra-peritoneal hemorrhage followed, from which M. Carnot succumbed in about three hours.

Dr. Poncet arrived within a few minutes, and found the president in a collapse. The hands were cold and the pulse could scarcely be felt. There was soon a partial rallying under champagne and injections of ether. On examination there was found a clean, penetrating cut about three-quarters of an inch long, oblique in its course, and of uncertain depth, outside of right border of xiphoid. The vest and shirt were wet with blood, of which somewhat less than three-fourths of a tumblerful had escaped.

A compress was placed over the wound, and the president in a recumbent posture, head lowered, was taken to his rooms at the Prefecture. Poncet, convinced that the liver was wounded, and that the real danger was from internal hemorrhage, undertook a "lateral laparotomy." Without resorting to ether, which was contraindicated by the state of collapse, he proceeded with the index finger of the left hand in the incision to enlarge the wound, by from two to three inches, cutting from below upwards. This incision gave him a fairly good view of the situation, and enabled him to introduce gauze pledgets with the aim of stopping the bleeding. The left lobe of the liver was brought into view, and it was seen to be bleeding from its convex surface. A clear, smooth wound, eighteen to twenty millimetres in length, corresponding in its form and direction to that of the skin, and invading the substance of the liver, was detected.

This wound was readily explored by the finger, and found to be funnel-shaped. During these manœuvres of exploration, the hemorrhage stopped. Then the attending surgeons packed the wound with iodoform gauze, with a sterilized compress externally, which was kept in place by pressure with the palm of the

hand made by M. Poncet. The hemorrhage, at first completely arrested, returned in a short time, and death speedily followed. At the autopsy it was found that the principal hemorrhage came from the portal vein, which was wounded in two places.

It is evident that the prostrated and moribund condition of the patient precluded any more extensive operation than the partial laparotomy performed, and that, under the circumstances, the administration of ether and further cutting in order to find and to tie the bleeding vessel, was not to be thought of. The surgeons in attendance are of opinion that the life of the president was somewhat prolonged by their manipulations.

MEDICAL NOTES.

THE PLAGUE IN CHINA. — The cases of plague are much diminishing in Hong Kong, and it is thought that the epidemic is about over. In Canton there is still a very large number of new cases each day, while the death-rate is but little lower.

THE CHOLERA. — The epidemic of cholera is still confined chiefly to St. Petersburg, but the situation there is most serious and menacing. The new cases number over two hundred every day, while there are from fifty to eighty deaths. There are over five hundred cases in the hospital at present. The disease has appeared in the infantry barracks at Krasnoeselo, a short way out of the city, while no section of the capital is wholly free from the disease. Many cases have occurred at Cronstadt and at Warsaw, while the provinces each report a few cases but no especial increase in the outbreak. The scattered cases reported from Belgium, the Hague and Brittany have not been followed by any epidemic, and there have been no further cases reported from Adrianople. It is reported that the disease has appeared with some severity at Marseilles. The United States Consul at Bagdad reports an extensive outbreak of disease following the severe floods. The disease is reported as of a paludal nature and due to the filth and stagnant water. The conditions described certainly are such as to invite an epidemic of cholera.

SMALL-POX AT RUTHERFORD, N. J. — In the first week in July three cases of small-pox were discovered in a family in Rutherford, N. J. They were promptly isolated, but during the last two weeks a considerable epidemic has broken out. In the week ending July 26th there were some fifteen cases reported to the board of health, most of them being among the Italian population and all in one tenement district.

DENGUE FEVER AT KEY WEST. — An epidemic of "dengue fever" has occurred at Key West. The troops in garrison there were first affected, and there have already been fifty-five men affected out of a total troop of one hundred and fifteen. There are also many cases among the residents of the city, there having been a total of over seventy-five cases reported to the Board of Health. There have been no deaths.

THE DEATH OF GENERAL PLEASONTON. death last week of General A. J. Pleasonton of Philadelphia recalls the blue-glass craze of twenty years ago. After graduating from West Point he devoted much time to various scientific experiments, the best known being those on the effect of blue light on animal life. After some ten years' observations he embodied his results in a lecture before the Philadelphia Society for Promoting Agriculture, in May, 1871, and subsequently in a book upon the "Influence of the Blue Color of the Sky in Developing Animal and Vegetable Life." The announcements made by General Pleasonton were followed by the well-remembered "blue-glass craze," under the influence of which people had blue glass in all their windows and even in the tops of their hats that they might always exist under the beneficent influence of a pale azure light. General Pleasonton was eighty-six years old.

AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION.

— The fourth annual meeting of the American Electro-Therapeutic Association will be held at the Academy of Medicine in New York, on September 25th, 26th and 27th.

THE AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS. — The American Association of Obstetricians and Gynecologists will hold its seventh annual meeting at Toronto, Ont., Wednesday, Thursday and Friday, September 19, 20 and 21, 1894, to which a cordial invitation is extended to the medical profession.

An American Doctor a Mandarin. — The Lancet-Clinic reports that Dr. William H. Park, a medical missionary and surgeon in charge of the Methodist Hospital at Foo Chow, China, has been given the rank of mandarin. The honor was bestowed on account of Dr. Park having successfully treated a Chinese general for his wounds.

THE AMERICAN JOURNAL OF INSANITY. — The American Journal of Insanity, which has been edited and published at the Utica State Hospital for the past fifty years, has lately been sold and transferred to the American Medico-Psychological Association, of which society it will henceforth be the accredited organ. The journal will be edited ad interim by a publication committee consisting of Dr. Edward Cowles, President of the Association, Boston, Mass.; Dr. Henry M. Hurd, Secretary of the Association, Johns Hopkins Hospital, Baltimore, Md.; and Dr. Richard Dewey, Chicago, Ill. Dr. Dewey will have the immediate editorial care for the present.

CANADIAN MEDICAL ASSOCIATION. — The Canadian Medical Association will hold its meeting this year at St. John, N. B., on August 22d and 23d, and there is every prospect of a largely attended meeting. The address in medicine will be given by Dr. Wm. Bayard, of St. John, and the address in surgery by Dr. S. F. Black, of Halifax. A cordial invitation is extended to physicians to visit the Association during its sessions.

RESIGNATION OF PROFESSOR PETTENKOFER.—Dr. Pettenkofer has resigned his professorship at the University of Munich. Considerable public comment has been made, as it is understood that the action was brought about by pressure from Berlin, owing to Pettenkofer's opposition to Koch's investigations. Professor Dr. Hans Buchner has been named as Pettenkofer's successor, with the rank of ordinary professor.

AN OPHIOLOGICAL LABORATORY. — A snake laboratory, for the study, under strictly scientific conditions, of snake poisons and cures for snake bites, is to be established in Calcutta by a native of the province.

PHYSIOLOGY AND THE PROGRESS OF WOMAN.—
The effect of physiological knowledge on a woman's mind is not always to be calculated. The Lancet quotes the following letter which was received by one of the examiners at a recent examination for a medical diploma, and was written by a feminine student of medicine:

"SIR, — Don't you dare refuse me again in physiology when you know I know all about physiology; I very likely know more than you do. I shall write to Mr. —— if you do about it. Very soon Doctors will be drawn only from we pure noble-minded women, and you vile drunken filthy men expelled for ever."

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the week ending at noon, July 25, 1894, there were reported to the Board of Health of Boston, the following numbers of cases of acute infectious disease: diphtheria 24, scarlet fever 20, measles 11, typhoid fever 11.

SECRETARY OF THE BOSTON MEDICAL ASSOCIATION. — At the last annual meeting of the Boston Medical Association, Dr. H. L. Smith, Newbury Street, Boston, was elected Secretary and Treasurer of the Association for the ensuing year, in place of Dr. Charles L. Scudder, resigned.

A "BABIES' HOSPITAL" IN BOSTON HARBOR.-The old hospital building on Rainsford Island in Boston Harbor, which has been unused since the new building has been finished, has been offered by the Commissioners of Public Institutions to Dr. H. C. Ernst for use during the next two months as a hospital for babies where they can be cared for away from the heat of the city. The building has been thoroughly cleaned, and is well equipped with utensils and watersupply. It will accommodate from fifty to seventy-five patients, and the medical attendance, superintendence and nursing has all been provided for by friends of the new charity. The nursing is to be in charge of the Sisters of St. Margaret. Transportation has been offered, and the only appeal for so worthy an object to the public is for the funds to provide sustenance for the patients. The undertaking is a most needed and worthy one and deserves to have a full measure of success.

THE FLOATING HOSPITAL AT BOSTON.— The longadvocated plan of a floating hospital for sick children in Boston has this summer been put into active trial reports from Health Commissioner Emery and the en-

The first under the auspices of the Berkeley Temple. trip of the barge was made on the 25th of the month, when seventy-five sick babies and young children were taken out for the day with fifty mothers or attendants. The funds do not yet permit of daily trips and the hospital barge is used from time to time, the second day's trial being last Tuesday. The barge is intended for mothers with sick babies and small children, who must accompany them; and its trips are in no way intended as excursions. No child over six years of age is taken, and none with contagious disease. privilege of a day's outing is obtained by tickets, which must be signed by a physician who has seen the child and must bear the doctor's diagnosis. The mothers are expected to bring with them a clean nursing-bottle and nipple. Each adult is given one warm meal, and milk is furnished free for the children twice in the day. It is hoped that this summer's work may show such good results as to give the hospital a fuller means for usefulness another year and put it on a permanent basis.

VERMONT STATE MEDICAL SOCIETY.— The eighty-first annual meeting of the Vermont State Medical Society will be held in Montpelier, Vt., October 11th and 12th.

DYSENTERY AT NORWALK, CONN. — A moderate epidemic of dysentery is reported from Norwalk, Conn., there being some eight or ten new cases daily, and on one day last week as many as five deaths attributed to the disease.

CONJOINED MEETING OF THE WHITE MOUNTAIN, CONNECTICUT RIVER VALLEY AND WHITE RIVER MEDICAL SOCIETIES.— The annual conjoined meeting of the White Mountain Medical Society, Connecticut River Valley Medical Society and the White River Medical Society was held at Hanover, N. H., July 31 and August 1, 1894. Papers were read by Drs. P. S. Conner, George W. Gay, Paul Mundé, David Webster, W. H. Parish, G. A. Leland and Edward Cowles.

NEW YORK.

A NEW SCHOOL OF CLINICAL INSTRUCTION.—
The New York School of Clinical Medicine is the name of a new institution for clinical instruction which has just been incorporated by the trustees of the West Side German Dispensary. Among the corps of instructors will be the following members of the Dispensary Staff: Dr. A. H. Goelet, gynecology; Dr. J. Mount Bleyer, laryngology and rhinology; Drs. Richard Kalish and James A. Meek, opthalmology and otology.

An Improved Water-Supply for Brooklyn.—At a special meeting of the Brooklyn Board of Aldermen, which was called on July 23d, to consider the question of giving the city an increase in its water-supply, a resolution was adopted making an appropriation of \$750,000. At the meeting a communication was read from the mayor, which was accompanied by reports from Health Commissioner Emery and the en-

gineer of the Department of City Works, favoring the plan adopted. By this extension of the water-works system, 25,000 gallons a day will be added to the city's supply. An additional benefit will be that it will enable the authorities to cut off the supply from two streams now in use which recent investigations have shown to be notoriously impure.

THE DISTRIBUTION OF STERILIZED MILK. - The sterilized milk charity organized by Mr. Nathan Strauss, is proving a great boon to the poor this season. There are now six depots in operation in the tenement-house districts and nearly a dozen stands for disbursing the milk in the various city parks. The principal depot is at the foot of East Third Street, and at this point Mr. Strauss has provided a large tent covering the pier extending out into the river, underneath which there are benches where mothers can sit with their children and get the benefit of the fresh air.

AN UNUSUAL CASE OF SUNSTROKE. — A case of sunstroke of unusual interest was recently treated at Bellevue Hospital. The patient was a powerful man in the prime of life, whose vitality proved to be very remarkable. When taken to the hospital he was unconscious, and from the extreme high temperature and the marked edema of the lungs present, it was not supposed that he could survive an hour. The degree of temperature could not be ascertained, as it is only known that it exceeded the registering capacity of the thermometer used, 110.8°. Under the active treatmeut resorted to, the temperature gradually fell, however, to 101° in the course of the night. On the following day it rose to 108°, in spite of treatment, and remained at this point for a number of hours. For two days the patient remained unconscious, but on the third day he regained consciousness, and as his temperature had by this time become reduced to normal there seemed a fair chance of his recovery. Later, however, a reaction set iu, and on the fifth day he died, the temperature rising just before death to 109°. It was ascertained that the man's name was Joseph Kenny, and that he was forty-two years of age. It is stated that in August, 1887, a cab-driver was admitted to Bellevue suffering from insolation, who had a temperature of 110.2°. In his case treatment proved successful, and he is to-day pursuing his avocation.

Miscellaup.

"CHARAKA SAMHITA." - OBSERVATIONS ON

THE relation of food to health and disease is an old topic of discussion; and it is not a little interesting to compare some of our modern theories with the conclusions reached by the illustrious son of Atri who in the twenty-fifth chapter of the "Charaka-Samhita" reviews the articles of food that are used in the well-known (curative) operations and in medicines. They are as

Food is the foremost of all articles that support life. Of all articles that are assuring, water is the foremost. Of all articles that dispel fatigue or exhaustion, the best

Of all articles that prolong life, milk is the best-

Of all articles that promote nutrition and lead to increase of flesh, the best is meat.

Of all articles that are soothing, the best is juice.

Of all articles that promote the relish of food, the best is salt.

Of all articles that are agreeable to the taste the best are those that have a sour taste.

Of all things that promote strength the best is the flesh of the cock.

Of all things that increase the semen the best is the vital seed of the alligator.

Of all things that allay phlegm and bile, the best is

of all things that allay wind and bile, the best is ghee. Of all things that allay wind and phlegm the best is oil.

Of all things that are destructive of phlegm the best is vomiting induced by emetics.

Of all things that are destructive of bile, purging is the

Of all things that are destructive of wind, the best are enemata.

Of all things that soften the body the best are the oper-

ations called Swedana (which induce perspiration).

Of all things that make the body firm the best is physical exercise.

Of all things that reduce corpulency the best is sexual intercourse.

Of all things that are destructive of consumption, that promote secretion of milk, that are agreeable to the constitution, that prevent the fluidity of the blood and that allay

hemorrhages, the foremost is the ghee of goat's milk.

Of all things that promote phlegm and bile the foremost is sheep's milk.

Of all things that promote sleep, the foremost is the milk of the buffalo.

THERAPEUTIC NOTE.

THE THERAPEUTIC USE OF STRONTIUM SALTS. -Adolf Ried reports 1 a series of cases of severe albuminuria treated with strontium salts in Drasche's clinic at Vienna. The experiments of Constantin Paul and Dujardin-Beaumetz have shown the salts of strontium to have a marked influence upon the albuminuria of renal disease, but have not pointed to any especial diuretic action from the drug. The cases reported were of various causes, and all received while under treatment a mixed diet. The lactate of strontium was used in all instances. An increase in the amount of urine was noticed, especially in cases of Bright's disease, with scanty urine and anasarca. The increase in the urine was often rapid, while the diminution of dropsy, though slower, was continuous. The action on the amount of albumin was less regular, but in one instance there was a diminution from six per cent. to one per cent. within a week; and in another, from eight per cent. to one and one-half per cent. in seventeen days. The following conclusions were reached; (1) Lactate of strontium reduces the amount of albumin in the urine in many cases of Bright's disease to a noticeable degree, but has not any such effect on contracted kidneys. (2) The manner of action is not certain. Dujardin-Beaumetz's theory of its exerting a favorable action on the digestion, and so reducing the toxine formation, cannot be accepted, as the exhibition of the drug in powder form apparently interfered with digestion, causing distress and vomiting.

¹ Wiener Klin. Woch., No. 17, 1894.



& Strontii lactatis . . . Aques
Sig. A teaspoonful three or four times a day.

(3) The use of the drng in the above dose has a decided diuretic action. Like any other diuretic drug it may fail in single cases. (4) On account of its diuretic action lactate of strontium is recommended in pleuritic effusion as a substitute and alternate for salicyl, since it can be given for long periods without any ill effects.

Correspondence.

THE STUDY OF PATHOLOGY IN GERMANY.

GÖTTINGEN. — COMPULSORY AUTOPSIES AT THE HOSPITAL. —
ORTH'S LABORATORY AND TRACHING. — AMERICAN MEDICAL STUDENTS AND ELEMENTARY COURSES.

BERLIN, June 20, 1894.

Mr. Editor: I enjoyed my visit to Göttingen very The pathological institute and the various hospital buildings are all new, and present a very pleasing appearance in their enclosed grounds in the outskirts of the town. In a book entitled "Arbeiten aus dem pathologischen Institut in Göttingen," published by Orth last October in honor of the fiftieth anniversary of Virchow's degree of M.D., he describes the former and present methods of instruction in pathology in Göttingen, and gives an account, with full plans, of the new pathological institute.

I noted with interest that in 1840, inasmuch as, on account of the superstition and prejudice of the people, it was almost impossible to obtain permission from relatives or friends for any autopsies, it was decreed through the influence of the clinical men who realized the importance to themselves and to their students of post-mortem examinations that in the future autopsies should be made on all who died in the hospital. This decree is still in force. It was not, however, until 1875 that the pathologist had full direction of the pathological institute including the pathological collection, and the duty as well as the right to make the post-mortem examinations of all the cases dying in all of the various hospital clinics. Previously many of the clinicians had insisted on performing the autopsies on their own

I shall not bother you with a description of Orth's laboratory. It is very conveniently arranged, and all of the rooms are connected by telephone. The assistants have each a large room fitted up with a writing-desk and every-thing necessary for their work. The rooms for the special students are very attractive, and are supplied among other things with microtomes and knives for the free use of the occupants. At present, outside of the two volunteer assistants, there is but one special student, an American doing general work. I have been surprised not to find more men in the various pathological laboratories doing special work, for every inducement is held out to them.

Orth is aided in his teaching and work by two assistants and two volunteers. Think of five instructors for a class of twenty-six in pathological histology! The class in pathology in the winter semester averages twenty-five, in the summer semester not over thirty. It is evident, of course, that more personal attention can be given each student under such circumstances. With large classes and few assistants the instructor must largely adopt methods by which he can hold the attention of the class as a whole.

Orth is a capital teacher; in the demonstrations, and in the instruction in the making of autopsies, he might almost be called a perfect drill-master. Every man receives his due share of attention from him, and Orth himself is the last to leave the autopsy-room. I shall now be able, after having followed him in his courses, much better to appreciate his "Diagnostik," of which the last edition has just appeared; and I am not surprised, after seeing the amount Harvard Medical School.

The best form of administering it appears to be solu- of his time taken up by routine duties, that his work on pathology is not yet finished.

I have been more or less interested in observing the American medical students in Germany. The greater proportion of them come from the Western States, and they are to be found mostly in Vienna and Berlin. In the former city there were about a hundred this winter, about half the usual number; and it was claimed by an assistant there that many of the men went to Berlin nowadays in-stead of to Vienna. But in Berlin the number was also less than usual; and it was said there that on account of the hard times many of the men had gone home. I met but three Americans in Prague, two in Strasburg and one

in Göttingen.

The men for the greater part, I think, come to broaden their clinical knowledge or work up a specialty; but - and it was this fact about them which particularly interested me — the great majority of them take courses in pathology and bacteriology. Indeed, it is from these courses to the Americans that the assistants in pathology in Vienna (with whom especially I talked in regard to the matter) derived the greater part of their income.

To me it seemed a pity to see even some of our own graduates who have been house-officers in the Massachusetts General and City Hospitals taking the elementary, intro-ductory courses in bacteriology and pathological histology because they had neglected their opportunities at home. They could have put in their time to so much better advantage in advanced courses in these subjects or at such clinics as they cannot get at home. Günther's course in bacteriology, for instance, which is very popular, is a beginner's course which takes up the principles of bacteriology. It occupies all of a man's time for four weeks. A course in pathological histology must consume about as much time, so that nearly two months are thus wasted on elementary work which should be required of every student who graduates in medicine. They could then more fully appreciate such an advanced course as, for instance, in Vienna, Kolisko's demonstrations of his very abundant supply of pathological material.

Men, however, who wish to work up the pathology of the special branch of medicine in which they are interested will do better to go to the smaller universities, where they can receive instruction and help from the head of the department himself. Very sincerely yours, F. B. MALLORY, M.D.

A READY CULTURE MEDIUM FOR THE GONOcoccus.

Boston, July 80, 1894.

MR. EDITOR: - The attention of the readers of the JOURNAL is invited to the fact that in a very recent No. of the Centralblatt für Bakteriologie und Parasitenkunde, Dr. R. Turro, of Barcelona, in a report of progress in his researches on the gonococcus, makes the statement that this organism grows readily on ordinary nutrient gelatine, which has not been neutralized subsequent to the addition of the gelatine.

I can confirm this observation, as also his statement that this organism can thus be (apparently) readily obtained in pure culture. I say "apparently," because the strict rules of bacteriology have not yet been applied to these cultures, though preparations made from twelve different colonies show only biscuit-cocci, which have the staining reactions of the gonococcus.

This method is much simpler than any of those previously proposed for the culture of this organism, the materials can be procured without difficulty; and thus far I have found the statement of Dr. Turro correct that the other organisms ordinarily associated with the gonococcus do not grow on this acid medium. M. W. Wood, M.D., grow on this acid medium.

Major and Surgeon, U. S. Army.

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METEOROLOGICAL RECORD.

For the week ending July 21st, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:-

	Baro-Thermom-Relative meter eter, humidity.							Velocity We'th'r. of wind.			Inches.			
Date.	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Rainfall in in
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*O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall.

RECORD OF MORTALITY FOR THE WEEK ENDING SATURDAY, JULY 21, 1894

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Deaths reported 3,674: under five years of age 2,014; principal

Deaths reported 3,674: under five years of age 2,014; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fever) 1,334, diarrheal diseases 1,046, consumption 302, acute lung diseases 191, diphtheria and croup 121, whooping-cough 51, typhoid fever 40, scarlet fever 25, cerebro-spinal meningitis 20, measles 15, malarial fever 10, small-pox 3.

From typhoid fever Philadelphia and Washington 9 each, Pittsburg 7, New York and Brooklyn 4 each, Cincinnati 2, Boston, Nashville, Chelsea, North Adams and Newburyport 1 each. From scarlet fever New York 9, Boston 6, Cleveland 4, Brooklyn and Somerville 2 each, Fall River and North Adams 1 each. From cerebro-spinal meningitis New York 8, Washington and Cincinnati 3 each, Chelsea and Pittsfield 2 each. Boston and Somerville 1 each. From measles Brooklyn 7, New York 5, Cleveland 2, Philadelphia 1. From small-pox New York and Nashville 2 each, Philadelphia 1. From small-pox New York 2, Brooklyn 1. pox New York 2, Brooklyn 1.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 21, 1894, TO JULY 27, 1894.

By direction of the Secretary of War, the order assigning MAJOR CURTIS E. PRICE, surgeon, to duty at Fort Custer, Montana, is revoked, and he is granted leave of absence for one month, to take effect upon being relieved from duty at Fort Porter, New York.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JULY

- B. H. KIDDER, medical inspector, ordered as member of Board of Medical Examiners, Navy Department.
- C. G. HERNDON, surgeon, detached from Board of Medical Examiners, Navy Department.
- G. P. Bradley, surgeen, detached from Receiving-ship "Wabash" and to the Navy Yard, Mare Island, Cal.
- E. P. STONE, passed assistant surgeon, detached from Marine Recruiting Rendezvous, Boston, and to the "Wabash."
- F. B. STEPHENSON, surgeon, ordered to the Marine Recruiting Rendezvous, Boston, Mass.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOUR WEEKS ENDING JULY 21, 1894.

CARMICHAEL, D. A., passed assistant surgeon. Granted leave of absence for thirty days. July 20, 1894.

GLENNAN, A. H., passed assistant surgeon. To inspect unserviceable property at Delaware Breakwater Quarantine. July 6, 1894.

Bratton, W. D., passed assistant surgeon. To report at Bureau for temporary duty. June 27, 1894.

KINYOUN, J. J., passed assistant surgeon. To proceed to Cape Charles Quarantine for special temporary duty. June 30, 1894. Designated to represent Department at International Congress of Hygiene and Demography. July 9, 1894. To inspect unserviceable property at Boston, Mass. July 17, 1894.

GEDDINGS, H. D., passed assistant surgeon. To report at Bureau for temporary duty. July 20, 1894.

Wertenbaker, C. P., passed assistant surgeon. To proceed to Delaware Breakwater Quarantine for special temporary duty. June 30, 1894.

YOUNG, G. B., passed assistant surgeon. To inspect quarantine stations. July 20, 1894.

PROMOTION.

Brown, B. W., assistant surgeon. Commissioned as passed assistant surgeon. July 19, 1894.

RECENT DEATHS.

WESLEY EVERETT BROWN, M.D., M.M.S.S., died in Gilbertville, Mass, July 30th, aged forty-two years. He graduated from the University of Vermont in 1878.

DB. ADOLPH HANNOVER, a noted Danish physician and naturalist, and at one time professor of medicine at the University of Copenhagen, died July 7th, aged eighty years.

COMMENDATORE EGISTO PAOLO FABBRI, died in Florence, Italy, on June 25th. Having acquired a fortune in the silk industry he devoted large sums to the advancement of medical knowledge and art. He gave to Florence the amphitheatre at the Institut di Studi Superiori, the laboratory for the surgical clinic and the equipment for the Laboratorio d'Igiene. He rebuilt many hospitals and asylums and organized the Guardia Medice Parmanent for the relief of the sick proprend the seni-Medica Permanente for the relief of the sick poor and the sanitary improvement of Florence.

BOOKS AND PAMPHLETS RECEIVED.

Chaucer's "Doctour of Phisyk." Reprint from Bristol Medico-Chirurgical Journal.

Twelfth Annual Announcement of the Medical Department of Niagara University, 1894-95.

Bellevue Hospital Medical College of the City of New York, Circular of Information, 1894-95.

The Colorado School of Medicine, Medical Department of the University of Colorado, Boulder, 1894-95.

Einige Worte zur Tuberculose und Krebsbehandlungsfrage. Von Dr. Severin Robinski. Berlin. 1894.

Typhoid Fever, with Special Reference to Treatment by Antiseptics. By Adolph Koenig, M.D., Pittsburgh. Reprint. 1894.

Address.

HYGIENE IN UNIVERSITY EDUCATION.1

BY JOHN 8. BILLINGS, M.D., D.C.L. (OXON.), Deputy Surgeon-General U. S. Army.

THE division and specialization of labor, which are characteristic of modern civilization, are applied in educational affairs, as well as in the supply of clothing, food and habitations for the people. Your beds and houses, bread and shoes, are such as they are, and not such as men had when the first students gathered at Oxford — and it is within your power to obtain, as necessities of your daily life, conditions which the Tudor kings could not command as luxuries - because a few men have discovered methods of controlling and using the forces of wind, heat, gravitation and electricity; because a larger number of men have applied their capital and brains to bringing these methods into use in collecting material, and in manufacturing and distributing the products; and because a multitude of other men have given bodily labor, for daily wages, to carry out the plans of their employers, each laborer doing but a very limited kind of work. In like manner the fact that you are about to receive practical, useful information as to the laws of life and death, the causes of certain unnecessary disease and suffering. and the means whereby these may be averted or prevented, depends on the fact that about half-a-dozen men have spent years in making observations and experiments, and in devising methods for the determination of the nature of these causes, that a hundred other men have made it their life work to apply these methods of investigation to the details of particular diseases, and that a much larger number of men have studied the results thus obtained and are engaged in their practical application and in teaching others how to use them. All of these agencies are necessary to obtain the end desired, but they are not all equally important, because some of them are more easily obtained than others, yet we need them all. We must have means to provide for increase of knowledge in hygiene, as well as to provide for the diffusion of such knowledge by means of university extension lectures and other agencies, because, as I shall try to show you, there are many things of great importance in practical hygiene which are as yet unknown.

When I had accepted the honor conferred upon me by the request to give this lecture, it became a serious question as to what I should talk about. I could only guess at the character and needs of an audience of university extension students, and as to what your lecturer on hygiene would include in his course; but on thinking over the matter, it occurred to me that some of the relations of hygiene to university education might serve as a nominal thread upon which to string a few suggestions which may be of interest to you just at the present time. University education in hygiene is another matter, including but a part of the field covered by my broader title, and if we were to limit it to the present condition of things — that is, to answering the question, "What does a university education in hygiene include?" - the answer would be a brief one. The older universities are conservative institutions, slow to change the scope and character of their work; and it is desirable that it should be so, for upon

Address given to the University Extension Classes, Oxford, England, August 7, 1894.

this depends a considerable part of the influence which they exercise. Scientific hygiene is a comparatively new branch of study, which, thus far, has been chiefly taken up as a part of the course in medical and technological schools; but there are now several universities which have professors and laboratories of hygiene, whose work is not confined to the pupils in their medical departments only, and it is safe to predict that this plan will soon be adopted by all the real universities.

What should a university education in hygiene include? Wherein should it differ from the course in hygiene in a technological or medical school intended to train sanitary engineers or medical officers of health? What should be its special objects? I will not try to formulate what I suppose your answers to these questions would be now, nor yet what the answers should be if you found the questions on an examination paper, but will try to suggest one or two points which, perhaps, may not have occurred to you.

The phrase "university education" implies breadth as well as depth of culture; and a man who has received such an education in any field of science should have some definite ideas as to what questions are still sub judice in that field — as to what additional data are still wanted, as to what original investigators and observers are working at; in short, he should know the boundaries of our present scientific knowledge on that subject, as well as the part which has been thoroughly explored.

He cannot get this information from manuals or handbooks, nor can a short course of lectures include much of it; it is to be obtained for the most part only by actual work in investigating, which is the best of all methods to demonstrate to a man what and how much there is that he does not know. A university education in hygiene should not only include information as to the nature and relative importance of the principal known causes of disease and death, immediate and remote, but also as to the cost of the means of partially or entirely doing away with these causes, as compared with the value of the results which may be thus obtained. It is not always worth while to be careful to avoid a danger; one may pay too much for a life insurance; there are times when one should go to battle, or meet a pestilence, or live in an unhealthy locality, when it is merely one's own life that is at stake; and there are also occasions when one should take the responsibility of leaving, or putting, in danger the lives of a few to preserve the welfare of the many. The importance and value of long life is always taken for granted in discourses upon hygiene; but if it were in your power to prolong the life of every one in England to one hundred years, would you do it? If you were offered as a gift that you should not die until you were a hundred years old, would you accept it without conditions? Why do we expend time and money to secure at public expense the preservation of the health and prolongation of the lives of congenital idiots, of the hopelessly insane, of hereditary and confirmed criminals?

If there is truth in the doctrine of the survival of the fittest, why do we interfere in the struggle for existence, and try to shift the inevitable penalties for the violation of Nature's laws upon those who have not violated them? Was Carlyle right when he said, "Let wastefulness, idleness and improvidence take the fate which God has appointed them, that, their opposites

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may have a chance for their fate. He that will not work according to his faculty, let him perish according to his necessity?" When you come to consider these and similar questions, you will see that the problems of hygiene are not merely mechanical, chemical, bacteriological, and medical; they embrace, also, sociological, political, and ethical considerations, and the world needs some "all-round men" to study them. Such men the great universities should endeavor to equip for this work.

The part which epidemic diseases have played in shaping the destinies of cities and of nations has rarely been investigated by historians. Even the two greatest epidemics of which we have any record, the Justinian plague and the Black Death, have received little more than a brief mention in the leading English histories; and yet each of these not only changed the map of Europe, but also exercised a profound influence upon the social customs and the religion of the people, an influence which has affected the new world as well as the old. In this connection some interesting data are given in a recent work, "The Great Pestilence (A. D. 1348-9)" by Francis Aiden Gasquet, 8vo, London, 1893, wherein the effects of the Black Death upon the Church in England are specially dwelt upon, and its results in the formation of trade guilds are briefly indicated.

The influence of epidemics on the progress of nations and communities is by no means merely a matter

of ancient history.

Yellow fever has, to a considerable extent, shaped the present commercial, social, and political condition of the West Indies and Central America, of New Orleans and Rio de Janeiro. Cholera was the immediate cause of modern hygiene: its ravages have been closely connected with certain religious observances, and its prevention is still a problem which must be solved by British statesmen; while the future of the continent of Africa depends quite as much upon progress in hygiene as upon political considerations. The International Conference at Paris, only four months ago, shows that questions of hygiene play an important part in matters of international comity, and the International Congress of Hygiene and Demography which last met in London, and is to meet again next September in Buda Pesth, is exercising an increasing influence upon public health legislation in all countries, an influence none the less powerful because it is persuasive and not compulsory.

Your teachers in hygiene can tell you what is known with regard to the causes of disease and methods of prevention, and that is much; for if we could induce every one to act in accordance with the teachings of the hygiene of to-day, there would be a great diminution of disease and a lengthening of life among men. But I am more concerned in this lecture to call your attention to the many things that are yet unknown, and yet which probably might be known with a little work, in matters affecting practical hygiene.

Let us take a few concrete examples. What is the cause of measles? How is it communicated? What is the probability that the disease can be communicated by a person after the eruption has fully developed and the diagnosis is certain? We do not know. We know that the disease is most contagious during the three or four days preceding, and during the first day taminated with the excreta of persons affected with of the eruption, and that attempts to prevent the the disease. spread of the disease in a family by isolating the pa- | . Journal of the Royal Statistical Society, Ivii, 1894, p. 15.

tient as soon as the eruption appears, rarely succeed, while the contrary is the case in scarlet fever and in small-pox. We suppose that the medium of contagion is the secretion from the upper air-passages, which is scattered in spray by the coughing and sneezing of the

Does the susceptibility to measles diminish with advancing years, as does that of scarlet fever? We do not know; but the experience of the Faroe Islanders, and of the American recruits brought together at the beginning of our last war, indicates that while it is most fatal in children under five years of age, it may be quite as contagious and nearly as fatal among adults as among children. Now all these are questions to be considered in deciding as to whether notification and isolation of cases of measles are to be enforced in any particular locality. We have fairly good statistical evidence that the evil effects of scarlet fever, diphtheria and small-pox have been diminished by compulsory notification and isolation; but I know of no such evidence with regard to measles.

Measles appears to have caused at least twice as great a mortality in the large cities of England and Continental Europe during the last five years as it has in the United States; but why this is so I cannot tell. The death-rate from measles is small as compared with that from accidents, or from many other forms of disease; but its evil effects are not to be measured by

its death-rate alone.

Dr. Hugh R. Jones, in an interesting paper on the perils of infant life, presented to the Royal Statistical Society in December last, says: "The danger of measles has been very greatly underrated. There is no doubt but that the tuberculous diseases of childhood, whether local, as lupus and enlarged glands, or whether general and fatal, as pulmonary phthisis, are often rightly traced and attributed to an attack of measles." There is no definite evidence upon this point, which is an important one. In the United States a considerable proportion of cases of feeblemindedness, deaf-mutism, and blindness, are attributed to measles, sometimes erroneously no doubt; but we must certainly consider this disease as of sufficient importance to warrant special precautions to prevent its evil consequences. I doubt, however, whether it is worth while to expend much public money, or to interfere with home life, in order to prevent it among children over five years of age; and the true solution of the problem will probably be the production of a mild form of the disease in children, and thus making them immune for the rest of their lives. This is practically what has been done for centuries in China with regard to this disease; and, when I was a boy, I have known people to deliberately expose their children to the infection of a mild case of measles in warm weather, in order "to get the disease through the family without risk," as they said.

Something of the same sort used to be done by northern men settling in New Orleans, in purposely exposing themselves to yellow fever when it existed in a mild type, in order that they might become "acclimated," as the phrase went.

Let us next take typhoid fever. Typical cases of this disease are caused by a specific bacillus which gains entrance to the body through food or drink con-Epidemics are due to contaminated

water or milk. The stools of a typhoid case can be cheaply and easily disinfected so as to destroy the specific bacillus, and I presume that many persons think that we know all that need be known to stamp out typhoid fever or, as the English registrars call it, enteric fever. In the United States, however, we have many cases of mild continued fever, lasting from twenty to thirty days, which we presume to be typhoid fever, but which are certainly not typical, and which shade into continued malarial forms of fever in a very puzzling way. There are also several known varieties of the typhoid bacillus; and it is not quite certain that one or more of these varieties do not exist at times in the intestinal tract without producing a specific fever in the person bearing them.

Can the specific, active typhoid bacillus be developed from some of these, under certain circumstances. in privy vaults, cesspools, or sewage? Is the typhoid bacillus carried in currents of sewer air? Are not all the cases in which it has been supposed to have been thus carried to infect men, more easily explained in other ways, as, for example, by the supposition that it has been conveyed to articles of food or drink through the agency of flies and other insects? What degree and duration of immunity from subsequent attacks does an attack of typhoid fever confer on a man? Is there any difference between the immunity conferred by a mild, and that conferred by a severe, attack? Are there attenuated varieties of the typhoid organism? Can these be developed into more dangerous forms though not just the same way.' under certain conditions? Can they be used to produce immunity?

All of these are as yet unsolved, yet probably solvable problems: and there are similar ones connected with each of the known and unknown pathogenic micro-organisms upon which bacteriologists in various parts of the world are working. Tuberculosis causes, in England and the United States, much more suffering and loss of life than any other single form of disease; more than cholera, yellow fever, small-pox, scarlet fever, typhoid fever, measles and diphtheria put together. Its immediate or efficient cause, the bacillus, has been carefully studied; and some of the modes of its transmission, through dried sputa, milk, etc., are fairly understood. To what extent heredity is a factor in its transmission, we do not know. Quite recently, in many places in the United States, it has been proposed to limit its ravages by means of compulsory notification, isolation of the sick, disinfection of their surroundings, and official supervision of milk and meat supplies; and, in a few places, some of these methods are being tried. The results of these experiments will be watched with great interest; they are good examples of the steadily increasing tendency to interfere with the liberty of the individual for the supposed benefit of the community.

The death-rate from consumption has been diminishing for the last twenty years in the eastern portion of the United States, and in most countries from which we have reliable statistics. Part of this decrease in the death-rate is probably due to improvements in food supply and in general sanitation, involving greater cleanliness and more exposure to sunlight, which last is one of the most powerful agencies in destroying the

part is probably due to a gradual increase in the proportion of persons who are immune against small doses of the tubercle bacillus, which increase is brought about by the law of natural selection. I shall refer presently to this immunity as connected with race, in relation to consumption, and also to pneumonia, another very fatal disease due to micro-organisms.

Now let us take an entirely different field of hygiene, namely, the effects produced on the health and life of men by inhaling air which has recently been expired by themselves or other men, and which also contains the exhalations from their skins.

It is generally accepted as a truism that air thus vitiated is dangerous to health, and that ventilation of living-rooms, bedrooms, barracks, school-rooms, etc., is an important sanitary measure. Forty or fifty years ago the danger was supposed to be due to carbonic acid, and the popular ideas on the subject are contained in the school-boy's composition on "Breath." He said:

"Breath is made of air. We breathe always with our lungs, and sometimes with our livers, except at night, when our breath keeps life going through our noses while we are asleep.

"If it wasn't for our breath, we should die whenever we slept. Boys that stay in a room all day should not breathe; they should wait till they get out-doors. For a lot of boys staying in a room make carbonicide; and carbonicide is more poisonous than mad dogs,

For the last thirty years the danger has generally been attributed to exhaled organic matter of unknown composition, but with poisonous properties, while within the last two years several experimenters have announced that the organic matter is not dangerous, and several researches are now going on to settle this important question.

Now, what are the effects upon men of exposing them for eight or ten hours a day to air rendered impure by their own exhalations, and to what particular change in the air are these effects due?

From the days of the English Barrack Commission down to about ten years ago the answer was, that such air produced consumption and other pulmonary dis-Now that we know that consumption and croupous pneumonia are produced by specific bacteria, the question is whether, if these bacteria are destroyed and kept out of inhabited rooms, which can be done to a very great extent, the foul air of an ordinary room will produce disease, and if so, what sort of disease. We do not know - and, therefore, we cannot produce scientific demonstrative evidence to convince architects and engineers that each man ought to have a certain stated supply of fresh air per minute or per hour, and that it is worth the cost of special apparatus to ensure this. Much the same may be said about the supposed injurious effects of sewer air, since we have no accurate knowledge or satisfactory evidence with regard to these effects.

There are two or three times as much sickness, and two or three times as many deaths, in crowded tenement-houses as in single dwellings of the better class, and these tenement-houses are unventilated or badly ventilated; but how much has the bad ventilation, and infection of tuberculous sputa scattered in the streets; how much the general want of cleanliness, insufficient a part of it, during the last ten years, is due to the and improper food, alcoholism, and vice of various education of the people as to the necessity of promptly kinds found among the tenement-house population, to disinfecting the sputa of tuberculous patients; and a do with this matter? And what are we to say about the low death-rate in tenement-houses occupied by Jews, except that race seems to exercise a powerful influence in producing this result?

In the course of lectures on hygiene which you are to have, you will no doubt hear much about the pathogenic bacteria, as causes of tuberculosis, typhoid fever, diphtheria, pneumonia, wound infections, cholera, etc., since an understanding of their nature, habits, and modes and conditions of growth is essential to the proper dealing with contagious and infectious diseases of all kinds, even those for which no specific microorganisms have yet been discovered. But there are other things besides micro-organisms to be considered in matters of personal, national, or international health, because even for those diseases of which they are the immediate cause, there are remote causes of great importance, such as heredity, poverty, ignorance, climatic conditions, overcrowding, alcoholism, occupation, and other things which destroy many without the aid of specific bacteria, and do much to make possible the destructive work of such organisms.

My friend, Sir Henry Acland, suggested to me that I should take "Comparative National Health" as the subject for this lecture, and any suggestion from him is to me almost equivalent to a command; but it is beyond my power to indicate even the boundaries of so broad a field as this within the limits of a single lecture, and I can, therefore, only touch upon one point connected with it, namely, the relation of race to health.

During the twenty years ending in 1890, the annual death-rate in Austria was 30.6; in Italy 28.6; in Prussia 25.6; in France 22.8; in Belgium 21.4; in England and Wales 20.3; in Ireland 18; in the United States 18; and in Sweden 17.6, per 1,000 of living population.

Such figures, however, prove very little, for in comparing the vital statistics of different countries and nations, either as to general death-rates or death-rates due to particular diseases, it is impossible to say what proportion of the difference observed is due to differences in climate and food, and what to race peculiarities. This difficulty can be in part avoided by examining the vital statistics of different races living under the same conditions as to climate, etc.; and the data coming from certain portions of the United States, which is now the great mixing-ground of races, are especially valuable in this respect.

In 1890 the city of New York contained about 335,000 white persons whose mothers were born in America, and 25,000 colored; 400,000 whose mothers were born in Germany; 400,000 whose mothers were born in Ireland; 120,000 Russian and Polish Jews; 55,000 Englishmen; and 54,000 Italians. You will see that it had a larger Irish population than any city in Ireland, and that but three cities in Germany exceed it in the number of German population.

Taking the deaths among persons fifteen years old and upwards for the six years ending May 31, 1890, we find that the annual death-rates per 1,000 of population in these different races are as follows: Irish, 28; colored, 23.6: English, 20.8; Germans, 17.0; Americans 16.0; Italians, 12.3: Russian and Polish Jews, 6.2.

The low death-rate of the Jews has been noted in Germany and France also. In New York City they occupy some of the most crowded tenement-house districts. A considerable number of those reported as Germans were Jews with a low death-rate; and if

these could be separated, the death-rate of the Germans would probably be over 19 per 1,000.

These are general death-rates only. Let us see what the figures are for certain causes of death. The annual death-rates for consumption were, for each 100,000 persons: colored, 774; Irish, 646; Germans, 329; Americans, 205; Russian and Polish Jews, 98. For pneumonia, the death-rates per 100,000 persons of all ages were: Italians, 456; colored, 390; Irish, 344; American whites, 273; English, 269; Germans, 214; Russian and Polish Jews, 170.

I will not weary you with further details of figures, which those of you who are specially interested in the subject will find in the Reports of the Vital Statistics of the Eleventh United States Census, but will merely say that the corresponding data from Boston, Philadelphia, Baltimore, Washington, and from the New England States as a whole, taken with those from New York State and New York City, and with those derived from a special investigation of over 10,000 Jewish families, including over 50,000 persons, lead to the following conclusions as being probable for the United States:

(1) The colored race is shorter-lived than the white; and has a very high infantile death-rate: it is specially liable to tuberculosis and pneumonia, but is less liable than the white race to malaria, yellow fever and cancer. (2) The Irish race has a rather low death-rate among its young children, but a very high one among adults, due to a considerable extent to the effects of tuberculosis, pneumonia and alcoholism. (3) The Germans appear to be particularly liable to disorders of the digestive organs and to cancer. (4) The Jews have a low death-rate and a more than average longevity; they are less affected than other races by consumption, pneumonia and alcoholism, but are especially liable to diabetes, locomotor ataxia and certain other diseases of the nervous system.

The effects of heredity upon liability to diseases and death appear to be due in part to difference in structure and composition of the tissues and fluids of the body, but to a much greater extent to differences in place and mode of life connected with relative poverty and ignorance.

The bacillus of tubercle and the micrococcus of pneumonia are affected as to their growth and development by hereditary peculiarities of structure of men; in other words, just as many individuals are more or less immune against these organisms under ordinary circumstances, so, also, are certain families and races; and the same is true as regards a large number of the contagious diseases, as well as some which are not contagious so far as we now know, such as cancer, diabetes, hystero-epilepsy, and scleroses of the brain and spinal cord.

Can this relative immunity be developed or increased in an individual or a family by artificial means, or by regulations of the habits and modes of life? And, if this can be done, what effect will the production of immunity against one micro-organism or disease have upon the effects of another micro-organism or cause of disease?

If we can produce a branch of the Irish race which will be as immune against the bacillus of tuberculosis as are the Jews, will that race be specially liable to diabetes or cancer?

tricts. A considerable number of those reported as As all men must die, the effect of stamping out one Germans were Jews with a low death-rate; and if particular form of disease must be to increase the

number of deaths from other causes, and in this sense it is true that vaccination has increased the number of deaths from accidents, from suicide and from consumption, because it has preserved children from small-pox to die at a later period from these other causes; but we have not a particle of evidence that the immunity against small-pox produced by vaccination is the cause of, or is accompanied by, a less immunity against some other disease.

It should be remembered that for all diseases of which one attack produces immunity, the tendency is, in the course of many generations, to make the whole population subjected to such an influence immune.

Perhaps some of you may think that such questions as I have suggested are purely theoretical, unanswerable, and, therefore, of no practical interest; but it is not so. Some of them, if not all, can be answered, and they ought to be answered. To do this, new lines of investigation must be opened - partly experimental, in well-appointed laboratories; partly by collective investigations by medical men and in hospitals; partly by new methods of statistical research based on disease, as well as on death-registration and the census.

And the universities should train some men to understand the importance of this work — the men who are to become legislators and heads of departments, and some other men who can do the work if means and opportunities are afforded them.

Observe that I say "should train some men," not "should train all their students." Of every hundred students at a university, not more than half-a-dozen can be developed into original investigators and thinkers, and probably not more than one in a thousand can ever be induced to devote himself seriously to such problems as I have indicated, because, as a rule, the only reward that can be expected is the satisfaction derived from the work itself. Such work requires much time, great skill and patience, and the opportunities which only a well-equipped laboratory or an official position can furnish.

The universities cannot produce the men qualified to do such work - "God alone can make an artist or a man of science"; but they can take care of such men when they appear, and can give them opportunity and encouragement.

If we accept the ordinary definition of hygiene as being the art of preserving and improving health, it is not so much this technological matter that a university education should include as the scientific foundations upon which the art rests. It does not appear desirable that every university man should know the proper gradient of a sewer, the best form of traps and house-drainage fixtures, the peculiarities of patent ventilators, or the proper construction of a hospital for contagious diseases, any more than he should know how to treat a case of pneumonia, or how to draw up a conveyance of a piece of real estate; but he should know where to go for accurate and reliable information and advice on these subjects.

It is now generally admitted that biology is a branch of science for which universities should provide the means of increase and of diffusion of knowledge; but it has not yet been generally understood that morphology and physiology, as ordinarily provided for in university work, do not cover the most important part of biology, that part to which they are merely neces-

narrow scientific foundations, namely, pathology. cannot be said to understand the structure and functions of an organ until we know what these are in its abnormal as well as in its normal condition. It is to experimental pathology in its broadest sense, including not only the study of lesions specially produced for the purpose, but also the study of the lesions produced in man and animals by disease, each case being one of nature's experiments, that we must look for the most valuable explanations of peculiarities of structure and function, for explanations of the mode of action of physical, chemical and vital agencies in the production of disease, for means to counteract the abnormal conditions and actions of organs and tissues; in short, for the scientific foundations of hygiene.

It appears to me that at the present time the majority of the English and American universities are in urgent need of a department of pathology properly equipped for original research and for teaching, not as a mere technological matter, or as merely a branch of the medical department, but as a department of general biology; and the organization of such a department should precede or accompany the organization of a department for the promotion of scientific hygiene.

A paper on "Hygiene in University Education" should certainly include something about the preservation of the health of teachers and pupils, the means by which they are to be kept most fit for their work. with due consideration of the influence of athletics, of cramming (whether mental or physical), of competition under pressure of examinations, etc., upon the complicated and curious mechanism of the human body; but I must leave this to others, and I do so with the less reluctance because I think that advice on these points is of little use in comparison with personal experience.

While I lay stress on the promotion of original research in problems of hygiene as one of the most important functions of a great university of the present day, it is by no means its only one. It is also to train teachers, men who can explain to others what is really known on these subjects, and the consequences thereof, in a fashion which will command attention, interest, and belief. It is knowledge of the truth about these things which frees a man from much unnecessary pain, causeless fears, and useless labor, and from being swindled in a thousand ways; and I presume that this university extension course in hygiene is intended to furnish knowledge, and also to create a thirst for more.

To one who has had little practical experience in sanitary matters, the importance of educating the people on this subject is not sufficiently apparent, although he may admit it as a matter of theory. He is too apt to suppose that the people at large can be made healthy by regulations enforced by officials employed for the purpose. He wants laws to suppress tuberculosis, puerperal fever, cerebro-spinal meningitis, etc., by means of enforced notification, isolation and disinfection. He would have a certain hourly supply of fresh air furnished by law to every sleeping-room; would compel every one to take a bath every day, or at least once a week; would have all food officially inspected, and prohibit the use of alcoholic drinks and tobacco to men under fifty years of age; would not allow the sale of corsets, or of shoes which do not conform to the natural shape of the foot; would regulate the sary preliminaries, that part which is the main reason hours of study and of exercise for school-children, and for their existence, and without which they rest on have inspectors examine their toys and picture-books for dangerous colors; in short, it is difficult to foretell what he would not do by legal process, if he could, to prevent what he thinks is injurious to life and health, and as a general rule he will find plenty of people who will passively assent to such propositions.

Perhaps, on the same ground, may be advocated the refusal of permission to marry unless both parties to the contract have been approved by skilled inspectors, or the official assignment of persons to particular occupations best suited to their health. It is possible that (by these and other regulations which will no doubt occur to you) a healthy community might be produced in time, provided that great care was taken to

prevent any one from getting away.

And no doubt the civilized part of the world is at present tending to increasing interference with the liberty of the individual for the real or supposed benefit of the community; but attempts to hasten this progress in advance of the education of the community, or without due consideration of the manifold social, commercial and professional, as well as the sanitary, interests involved are not likely to produce good results; on the contrary, it is probable that their remote effects may be the injury of the very cause wnich their enthusiastic advocates are trying to promote. You cannot legislate a new layer of cortical gray matter into, or a cirrhosed liver out of, a man.

It has been said that the car of progress has square wheels; at all events, it bumps horribly sometimes, and the results of going too fast may be very unpleas-

ant, even if they are necessary.

Thirty years ago Dr. Parkes remarked that "in the scheme of Providence it may not be meant that men shall be healthy," and asked whether the belief that in the future there may be an art of hygiene which will keep the body, mind and soul in perfect order is merely "one of those dreams which breathe a blind hope into us, a hope born of our longings and destined to die of our experience."

"After all the stormy changes, shall we find a changeless May? All diseases quenched by Science; no man halt, or deaf, or blind; Stronger ever born of weaker; lustier body; larger mind?"

The scientific foundations of practical hygiene have been immensely broadened and strengthened within these thirty years; and within the same period, in most civilized countries, the death-rates have been lowered, the average duration of life increased, and life, while yet it endures, has been freed from some of its pains and terrors. But the community of perfectly healthy men and women does not yet exist, nor is it possible that such a community, if found, could continue to exist indefinitely if the present rate of increase of population of the earth shall continue.

Sewage is inseparable from humanity; and each one of us carries about within himself millions of bacteria, which usually help him to digest his food, but which at times wander into his tissues and produce mixed infections which tax the utmost skill of the physician

and surgeon to treat.

In studying medical and vital statistics to determine the influence of sanitary work in obtaining purer watersupplies, better drainage, greater isolation and restriction of contagious diseases, etc., we are "somewhat in the position of a man on the deck of a large Atlantic steamer out of sight of land, and gazing on the troubled

ocean. He sees many waves, large and small, apparently moving in very different directions; and it is not until he has by careful examination and repeated comparison learned to distinguish the ripples due to the wind now blowing, the larger cross-seas resulting from forces which were acting a few hours before, and the long, rolling swells which indicate to some extent the direction and force of the tempest of yesterday, that he can begin to understand the roll of the ship on which he stands: while to appreciate the force and direction of the great current which is sweeping with it all the troubled water and the ship itself, requires skilled observation with special instruments, and the use of charts which embody the experience of hundreds of voyages. So, also, in viewing the records of human life, disease and death, the variations which are at first most perceptible are often those which are most superficial, and which give little or no indication of the magnitude and direction of the movement of the great masses beneath." *

During recent years the birth-rate has been diminishing in proportion to population in most civilized countries, as will be seen by the following table.

BIRTH-RATES PER 1,000 POPULATION.

Country						1880.	1890.
United St	ate	6.				36.0	30.7
England a	nd	Wal	86			34.2	30.2
Scotland						38.6	30.3
Ireland						24.7	22,3
France						24.5	21.8
Belgium						31.1	28.7
German E	mr	ire				37.6	85.7
Austria						38.0	36.7
Switzerla	nd					29.6	26.6
Denmark						31.8	30.6
Norway						30.7	30.0
Netherlan	ıds					35.5	32.9

This diminution of the birth-rate began in most countries in 1876, and is a matter of considerable importance in the sanitary as well as in the sociological problems of the future, for it must be given due consideration in making plans for regulating by law the health, the labor, and the lives of men.

What are the relations between diminishing deathrates, diminishing birth-rates, and diminishing marriagerates? How much of the lowering of the death-rate in recent years is due to public sanitation? how much to improvements in medicine and surgery? how much to increasing immunity of the great mass of the people to certain forms of disease? how much to better and cheaper food-supplies? Is it more probable that twenty years hence the death-rates will be lower, or that they will be higher than they now are?

It seems to me that a great university which is worthy of its name should provide for the training and equipment of a few men to consider these and similar questions, and for the training of many men who are to be the future legislators for, and advisers of, the people, in such fashion that they can appreciate, and make practical applications of, the conclusions to which the special students shall arrive.

Just at present the practical problems of public hygiene relate mainly to masses of men, to cities, bound together by the iron lines of the railway and the telegraph; but as the coal supply diminishes, the cities will begin to diminish also, unless our engineers will give us some new means of storing the forces of

³ Cartwright Lectures on Medical and Vital Statistics, New York 1889. the sun's rays, of the winds, or of the tides, and when that happens, sanitary questions will become of the first importance for all countries. "As of the leaves on a thick tree, some fall and some grow; so is the generation of flesh and blood, one cometh to an end and another is born."

Whatever happens, we must all continue to live in the shadow of the hawk's wing, as our forefathers have done, since each has but a certain span of life, which he cannot lengthen, although he may easily shorten it. He can, however, learn not to be afraid of this shadow—learn to look up and not down, to look out and not in; and one of the best means of doing this is to devote time and thought and labor to the helping of others to help themselves, which is the essence of public hygiene, as it is of true charity and of all real human progress.

This is a part of that wisdom of which we are all seekers, and of which such knowledge as can be gained in university halls is but a means and not an end, — that wisdom which, speaking through the poet, has said:

"I wear no garment, drop no shade
Before the eyes that all things see;
My worshippers, howe'er arrayed,
Come in their nakedness to me.
The forms of life like gilded towers
May soar, in air and sunshine drest,
The home of Passions and of Powers,
Yet mine the crypts whereon they rest.

"Embracing all, sustaining all,
Consoling with unuttered lore,
Who finds me in my voiceless hall
Shall need the oracle no more.

I am the knowledge that ensures
Peace, after thought's bewildering range,
I am the patience that endures;
I am the truth that cannot change."

Original Articles.

SURGICAL DEMANDS IN COUNTRY PRAC-TICE.1

BY W. P. GIDDINGS, M.D., GARDINER, ME.

To succeed in any business in life two things are essential, namely, natural aptitude and acquired fitness. The varying features of these pre-requisites are naturally suggested at mere mention. Innate qualities cannot in any way be acquired, nor can acquirement, however great, be made fully compensatory for the deficiency of native taste and talent. Surgeons, in a broad sense, like poets, are born not made. This implies mechanical genius, a quick eye, steady hand, sound judgment and calm deliberation. Possessing these, natural inclination, perseverance, industry and fidelity will place one in the front rank and open up the avenues to all emoluments of name and fame. There is no place for the timid, hesitating man in the field of surgery, where emergencies call for ready courage and quick decision.

The accidents of life are too numerous, the necessity for immediate action too great, the demand for nerve too imperative and the appeal for relief too urgent, in many cases, to permit delay, and call for knowledge, skill and pluck to carry to a successful issue cases occurring in the experience of every medical man in country as well as in city practice. The field of sur-

¹ A paper read before the Maine Medical Association, June 14, 1894.

gery has so broadened within the last decade as to make it incumbent upon every practitioner who settles in rural districts to add to his knowledge of general medicine that of surgery sufficient to make him capable of meeting for the time any emergencies liable to arise at any hour. While the graver accidents are much more numerous in large railroad centres and manufacturing towns, they do occur in remote places and thus no man is left exempt from call, responsibility and obligation to make himself proficient to the extent of acting quickly and intelligently until counsel and assistance can be obtained.

It is in such emergencies that the advantage of having cultivated one's native talent appears in dexterity of action. Common sense may suggest plans to pursue, but trained judgment, the offspring of study, lays the line and maps the true, safe and successful course. "No man," says Wise, "ever soared to eminence on the lazy wings of genius," which truth is repeated in another form that, "we rise from our dead selves to nobler things" only by seizing upon all opportunities and possessing ourselves of the knowledge and experience of the surgeons of the past and present. While the facility for acquirement of abstruse facts varies greatly in different individuals, and the simple to some is the complex to others, diligent, persistent effort carries the plodder to the goal of respectable attainment and fills the demands of country surgeons. By this statement I do not mean to be understood that the country doctor or surgeon is by nature inferior in ability or courage to his city confrère, but the stimulus to dig and delve in those branches for knowledge so essential to surgical success is less, and the natural tendency is to lapse into indifference towards subjects so seldom required. All understand that knowledge begets courage, and courage confidence; that the combination makes heroes and conservators, meu who are ready in emergencies and conservative to wait when waiting is full of hope.

In injuries of the hands and feet, especially in crushing or mangling accidents, delay for a sufficient time to determine the vitality of tissue is often the salvation of the entire member. Though the bruised and lacerated parts may appear injured beyond nature's ability to repair when first seen, cautious waiting is repaid in seeing the system assert its force in returning circulation into parts apparently dead, and marks the boundary line for operation, or shows function for full repair by granulation. I have myself saved three feet entire by advising delay when I had been sent for expressly to amputate. I have through my practice adhered strictly to the advice given upon this subject in Holmes's "System of Surgery" and in no instance have I regretted it. Fortunately the opportunities to learn and practise the best and most approved methods are as free to the country practitioner as to those in large centres, and are determined largely by desire and will; defect is in carelessness of habit and thought. There is no patent on methods of mental amplitude nor is its exercise confined to a favored few in metropolitan practice. It is the prerogative of every man to use his highest powers to his personal advantage so they be directed in legitimate channels and to work out for himself the greatest results attainable. Conception of duty and the best methods to fulfil it, is the natural offspring of broad culture, and by this high standard the communities in which we severally practice our profession measure us. The importance of every man is in proportion to the impression he makes upon the people through personal association or influence reflected by others. Study and thought crystallize into habit that makes action easy and natural, and this self-possession inspires the confidence of our patients, thus giving to us the most potent therapeutic agent known to man. True personal influence depends in a measure upon our manners independent of attainments, but these alone cannot hold patients to us long unless they are backed and fortified by other qualities of which the public soon learn by observation. Deception usually dies an infant; but if it survives a little longer, its age is limited, and at best it is never more than a dwarf; in fact, in many lines of surgical requirement deception has no birth.

Accidental hemorrhages from large and important vessels threatening speedy death do not permit delay of interference, or allow a fraction of time to learn anatomy or study the surgical methods for its arrest. Here knowledge, forethought and action count double; first, the saving of the patient, and, second, the saving or making of a reputation. Awkward hesitancy before anxious bystanders is quickly interpreted as ignorance and incompetency, nor are they slow in bringing their verdict or imposing sentence without mercy. people expect, as is their right, that the man who settles among them, advertises himself as "Physician and Surgeon," and thus asks of them their confidence and support, possesses a reasonable degree of knowledge and skill, that he should be qualified to meet the usual, or if necessary the formidable accidents of life intelligently and effectively for the time being at least. The only way to disarm criticism is proving competency in doing, and the best way to avoid suits for malpractice is proficiency in diagnosis and correct treatment of the ordinary accidents, such as fractures, dislocations, hemorrhages, etc. It is of the first importance to learn anatomy in a practical way so as to keep in mind the relationship of the various parts of the organism.

One, and the main reason, I apprehend, why practitioners grow rusty in their anatomy, physiology and pathology is, they read without study; that is, their reading is cursory, and is not mentally reviewed sufficiently to incorporate the minute with the general. Speaking from personal experience, it is much easier to forget than to retain; and the only way to hold permanently useful and needed knowledge is by first carefully reading, thoroughly reviewing and mentally digesting afterward. One may argue that it is not essential to remember the histological element of organs; that of the bones, the lameliæ, Haversian canals, lacunæ and bone corpuscles are of no practical value in the ordinary injuries and diseases to which they are so subject. Yet none will deny it is necessary to good surgery to remember all about the diaphyses and epiphyses, the medullary structure and bone composition.

The practical utility of specific knowledge is often as apparent to the layman as to the professional, and counts immensely in favor of its possessor. I have always thought it good policy to be on more familiar terms with one's business than with one's patients. Between the needs of our patrons and their demand of us to serve them well and faithfully there is little time for other matters, except the well-earned and needed respite which every physician should take once, or better, twice each year. While the people who em- now universally admitted. The numerous agents, or

service, they in turn are under obligation to us to consider our needs and Nature's demands for rest and recreation that we may recuperate in mind and body and come to serve each with alertness of faculty well trained, and unwearied because of timely broken toil. With these balanced conditions our duties are plain, and follow each other in regular and natural sequence. First, primary preparation in a well-founded knowledge of the natural and healthy system, anatomy being the basis of the whole, with physiology making clear to us the combined and separate functions of the various organs of the body in a normal state. All other allied branches of medical and surgical science rest upon these, and form the only means of comparison between the natural and unnatural. Intelligent appreciation of diseases and injuries are possible only as these are understood, and the mastery of them gives easy acquirement of collateral branches. Habits of study set in motion faculties of human reason, which give facility of acquiring and doing.

The numerous and manifold duties of the country doctor are calculated to develop the whole man, making him independent, self-reliant and capable. Removed from large centres, and beyond the reach of immediate call upon brother practitioners, he is thrown upon his own resources and forced to think and act for himself. The work performed is the measure of original and acquired ability. In these times, when progress is the order of the day, the question naturally arises "by what means can I keep pace with advanced thought and practice?" In the multiplicity of new books, one is often at a loss to know what to purchase and read. My own conviction is, that having a few well-recognized standard authorities, exhaustive in scope, on surgery and also on medicine, since the two are often inseparably combined, it is better to depend upon the medical and surgical journals for descriptions of new operations, methods of performing them and after-treatment. In all our recent surgical works, the excellent chapters on inflammations, micro-organisms and antisepsis give one a clear understanding of the status of surgical science up to the present time, and the weekly or monthly periodicals carry us forward in the onward march, keeping us always abreast with the advance guard and in touch with the best thought and talent of the day. Each year, in fact almost monthly, new devices or remedies are thus brought to notice by our progressive men covering the entire field of professional duties, demanding investigation, trial and conclusions as to their results and value as adjuncts to the old and tried armamentarium proven beyond cavil. In reading these pithy, clear articles upon the use of new methods, one gets fresh ideas, and reflection is stimulated, by which the mind is fitted to judge of innovations in surgery, or the therapeutic value of new remedies. The multiplication of the synthetic or coaltar products are known largely through the journals, and in the same way competent men make known their indications for use, and their therapeutic or toxic effects. In this paper, however, we confine ourselves chiefly to surgical demands, as they arise in country practice, but as the therapeutics of surgery and forms of sickness are often identical it is incidentally referred to.

Just here I wish to refer again and in a more extended way to antisepsis, the importance of which is ploy us have a rightful demand upon our time and any of them at times may not be within reach of the

surgeon when necessity or better convenience calls for them. It is not to my mind absolutely necessary that one should have carbolic acid, bichloride or biniodide of mercury, or any other of the agents in common use to secure sufficient cleanliness compatible with healing of wounds by first intention. I have so often used boiled strained water, and dressings heated to a degree sufficient to destroy pyogenic germs, and had perfect results follow, that I have come to regard these means alone as being as efficient within certain limits as with the germicides in combination. It goes without saying that heat is the all important agent in the preparation of instruments and dressings, and this preferably moist. It is always available and by far the most valuable, but in cleansing the field for operation, or the hands of the operator in a satisfactory way, we are unable to use it at a high enough temperature to effectually destroy the germs, hence the added value of such distinct germicides as will destroy bacteria, and yet be tolerated by the tissues. In case, however, these are not at hand, instruments and dressings can be made perfectly aseptic by boiling water and by straining it; and allowing it to cool sufficiently under a cover one can safely use it for cleansing either accidental wounds or those made by the surgeon's knife. With soap, boiled water, and a good clean nail-brush, which every man who attends upon or inflicts a wound should always have in his grip, he may, in my judgment, undertake the care of a surgical case with the assurance of success in the majority. In what has preceded it has been premised that special parts of the body, such as the head, the armpits, the genitalia, etc., will in accidents or operations receive that extra precaution demanded by reason of the hair serving as a favorite midus for the lodgement and retention of infective germs. Keeping in mind these few general principles, and observing them strictly, the minor but no less important duties will naturally receive atten-

So far, we have referred more to general than to special demands of the country surgeon, only briefly mentioning those injuries by far the most frequent and important since, too often, from unsatisfactory results, suits in malpractice grow out of them. I hardly need say I refer to fractures and dislocations. they should possess an especial interest and importance is made manifest by the records of our courts of law, personal knowledge or perchance bitter experi-That these suits are usually unjust is a matter for professional congratulation, but that bad results have occasionally been due to carelessness and incompetency, honesty compels us to regretfully admit. That sometimes, owing to peculiar and unusual conditions attending these accidents, a positive diagnosis cannot at first be made, shows the absolute necessity of studying and examining each one from all sides. simple uncomplicated fractures — fortunately the most common - small difficulty is encountered, but with serious complications it is a different matter entirely when duties are onerous and demands imperative.

It is not necessary to classify the varieties in nosological order to show the scope of knowledge and skill required, or review in detail any particular forms of fractures or dislocations with complications, in order that the lessons of need be impressed. If the possible or probable demands of the common accidents are duly considered, they of themselves indicate the line of in-

ment. The axiom that "a little knowledge is a dangerous thing," is too often forced upon us by unsightly results and bitter consequences. The means of avoidance are obvious; in knowing first what rational course should be adopted in the beginning, continued or varied as needs require to the end. Second, apprising the patient or friends, before good evidence, of the dangers of imperfect form or function to the seriously injured member however much is done. What is true of fractures is equally true of any severe injury requiring skill and judgment in treatment. In closing, we may say that it is also true that the demand for intelligent consideration of the surgeon's limitation of power by the patient is equal to that required by the patient from the surgeon, and it becomes the duty of every practitioner to enforce upon his patient's mind these mutual demands that he may avoid unjust censure to himself, and command that appreciation and gratitude from his patrons which intelligent, faithful service rightfully merits.

LEUKEMIA IN INFANTS.

BY JOHN LOVETT MORSE, A.M., M.D., Physician to Out-Patients at the Boston City Hospital and at the West End Nursery and Infants' Hospital.

LITTLE is known concerning the etiology of this disease. Several cases are on record which prove that a pregnant woman with leukemia cannot directly transmit it to her offspring. Cameron 1 reports a case where the child of a leukemic mother died on the fourth day, and the autopsy failed to reveal any evidences of leukemia. Greene,2 also, reports a case in which a leukemic mother was delivered of a healthy child. Sänger a had a case where a leukemic mother gave birth to a healthy child which did not develop leukemia, although kept under observation for some time, while in Degle's 4 case the child was feeble but showed no signs of leukemia. Askanazy also reports a case where a woman with myelogenous leukemia was delivered at full term of a slightly macerated fetus, which, on autopsy, showed no evidence of leukemia. On the other hand, Sänger reports a case in which a healthy woman was delivered of a deadborn fetus at the thirty-second week, which, on autopsy, showed well-marked signs of leukemia. It is possible, however, that the tendency to the disease may be transmitted. Several cases are on record of its occurrence in more than one member of the same family. Griffith 6 quotes cases of Casati 7 and Eichhorst bearing on this point; while Osler relates a very interesting case of Cameron's in which the disease was present in three generations. Biermer 10 reports its occurrence in sisters, but it is hardly possible to rule out rhachitis in this instance. cases in twins are also open to the suspicion of anemia infantum pseudoleukemica. Ortner,12 also, saw the disease in sisters.

Rhachitis is supposed to have some etiological connection with the disease in children, but its influence is probably not as great as has been supposed. It must be remembered in this connection that very few of the so-called cases of leukemia in children have been carefully worked up and reported. In very few has a blood count been made, and in only one or two has there been a differential count of the white corpuscles. Fox and Ball 18 in several hundred cases of quiry which insures proficiency in diagnosis and treat- rhachitis found the spleen enlarged in twenty-five per

In sixty-three cases of splenic tumor in infants, which they examined, rhachitis could not be positively excluded in one, and in almost all was very marked. In the few cases in which an examination of the blood was made nothing more than a slight leucocytosis was ever found. Carr 14 obtained the same results in a few cases which he examined. Kultner, 15 also, speaks of the frequency of splenic tumor in rhachitis and calls attention to the ease with which splenic enlargement takes place in children. He examined the blood in ten cases, and in none of them found any evidence of leukemia. This frequent association of splenic tumor with rhachitis is undoubtedly the source of the common acceptation of rhachitis as a cause of leukemia. It must be said, however, that rhachitis has been present in nearly all of the more carefully reported cases of leukemia in children. Its true relation, however, can only be determined by the examination of the blood by modern methods in a large number of cases.

The same doubt hangs about the relation of syphilis to leukemia in children. Fox and Ball 18 found the spleen enlarged in forty-eight per cent. of their cases of inherited syphilis, and in sixty-three cases of splenic tumor in infants, forty-one had inherited syphilis. The examination of the blood in these cases also showed at most a slight leucocytosis.

Leukemia has sometimes developed in adults after trauma. Mosler 16 has reported a rather doubtful case of this sort in a child.

The disease is most common in middle-life. Birch-Hirschfeld,17 in 1878, out of 201 cases collected by him, found only four under one year. Hayem,18 in 1879, expressed the opinion that only four or five cases had been seen in children under one year. Baginsky,10 on the other hand, thinks that from fifteen to twenty per cent. of the cases are seen in children under ten years, and Gerhardt 20 thinks it is as frequent in children as it is later in life. But little reliance can be placed on these figures, however, because of the possibilities of errors in diagnosis.

Males are generally more prone to the disease than females. This rule seems to hold good, also, as regards children, so far as the figures are of use in so small a number of cases.

I have been able to collect 20 cases of leukemia in infants out of literature. The diagnosis in the majority, however, must be regarded as doubtful. In the earlier cases no examination of the blood was made, and in some of these the diagnosis rests entirely on the clinical picture, no autopsy having been made. many of the later cases a blood count was made, but in very few has the character of the white corpuscles been noted, and in only one has a differential count of them been made. The doubt that surrounds them is well shown by the fact that each author in turn has been sceptical as to the accuracy of the diagnosis in most of the cases of his predecessors. It is highly probable that many of them were cases of rhachitis with splenic tumor and anemia, or of anemia with leucocytosis — the anemia infantum pseudoleukemica of v. Jaksch.21 In the future no such confusion will be possible, as a differential count of the white corpuscles makes the diagnosis positive.

The cases, with dates and ages, are as follows: Golitzinsky,22 1861, two cases, eleven months and two weeks respectively; Mosler,16 1864, six months; Seitz,28 1866, one year; Stilling,24 1880, one year; Fagge, 25 1881, twenty months; Senator, 11 1882, twins present in this case, the leukemia probably having de-

of eighteen months; Ballowitz, 26 1884, five months; Litten, 1887, eighteen mouths; Hochsinger and Schiff,28 1887, sixteen months; Sänger,8 1888, fetus at thirty-second week; v. Jaksch, 21 1889, fourteen months; Hayem, 18 1889, ten months; Mayer, 29 1890, sixteen months; Chaumier, so 1890, sixteen months; Ortner, s 1891, eight and a half months; Middleton, s 1893, sixteen months; Osler, 1893, eight months; Engel, 1894, thirteen months. It is highly probable, however, that not more than half, perhaps not more than a third, of these were really cases of leu-

My own case follows: Joe K., one year old, came to the West End Nursery on April 26, 1894, as an out-patient. His parents were both Russians, and, although very poor, seemed well and strong. As far as they knew, no relatives had had any disease of this nature. No history of syphilis could be obtained. Four other children were alive, well and not rhachitic. Two had died of acute disease in Russia. No very definite history of his illness could be obtained. He was weaned at three months, and had been fed exclusively on condensed milk for the last six months. He had been failing gradually for some months, his belly had been large for two months, and he had been unable to lie on his left side for a month. Never had nose-bleed or hemorrhages from stomach or bowels. Never had any eruption on body. Vomited occasionally, bowels were somewhat constipated, the dejections being lightcolored. No cough or pain.

Physical examination showed a markedly atrophic child, very anemic. The head was large, forehead prominent, and anterior fontanelle widely open. Moderate rosary and enlargement of epiphyses, with slight bow-legs. Marked enlargement of glands in neck, axillæ and groins. Heart and lungs normal. Abdomen was very much enlarged but contained no fluid; superficial veins distended. Liver dulness began at upper border of fifth rib in nipple line, and the lower border could be felt round and smooth about two fingers' breadth below the costal border in the same line. The spleen was very much enlarged, coming from beneath the costal margin just outside the parasternal line, running just outside the umbilicus, then beyond the middle line, filling up almost the whole left iliac region. The notch could be plainly felt. Spleen and abdomen not at all tender. No hemorrhagic spots on The blood examination made at this time is skin. given below.

It was impossible to keep the child under observation, but he was seen again on May 28. He had failed rapidly during the month. His skin was very pale with a decided yellow tinge, the face, body and extremities being thickly covered with purpuric spots, varying in size from that of a pin-head to that of a leadpencil. These spots had appeared two days before, at which time he developed a cough, and refused to eat. Had had no other hemorrhages, bowels were loose, dejections of normal color, no vomiting. Examination of the chest showed a broncho-pneumonia, involving the lower two-thirds of the left lung, and a well-marked bronchitis in the right. The heart was normal. Abdomen rather more distended, not tender, no fluid. There was a slight increase in the size of both liver and spleen. He was almost moribund, and probably survived but a few days.

The usual association of leukemia with rickets was

veloped subsequent to the rhachitis. The latter was undoubtedly due to improper food and surroundings, and it seems more reasonable, in the present state of our knowledge, to consider the leukemia as arising from the same cause rather than as secondary to the

The blood-count, made on April 26th, showed 2,900,000 red corpuscles and 48,000 white per cubic millimetre, giving a proportion of one to sixty. A differential count of 1,000 white corpuscles on slips, dried and stained with Ehrlich's triple stain, resulted as follows:

Small lympho	cyte	٠.							284 ==	23.4 %	
Large lympho	cyte	5 AD	id tra	nsit	lon f	orms	•		81 ==		
Myelocytes			•	٠	•	•	•		214 =		
Polynuclear I		oph	iles	•	•	•		•	465 ==	• • •	
Ecsinophiles	•	٠							6 ==	.6%	

The classification is that recommended by Thayer.** Slips stained with eosin and methylene-blue showed numerous mononuclear and polynuclear cells with fine granulations which took the eosinophile stain feebly. Slips stained with dahlia showed the presence of a very few "mastzellen." Numerous partially destroyed cells, both mononuclear and polynuclear, were met with.

The red corpuscles were also of much interest, many forms being met with. There was a very marked poikilocytosis, a moderate number of microcytes, and many macrocytes, many of these being three times the diameter of a normal red corpuscle. Many of all these forms lacked the normal concavity. Nucleated red corpuscles were present in great abundance. No microblasts were seen, however. Many cells, the size of normal corpuscies, were met with in which the nucleus was small, feebly stained, and with little nuclear structure, the protoplasm being not quite homogeneous. "wrinkled," as it were - and staining a reddish-violet. These may, perhaps, be regarded as undeveloped normoblasts. Normoblasts were very abundant, always with one nucleus, which showed a well-developed nuclear structure, and which occasionally presented indentations, as if division was beginning. The nucleus was rarely in the centre, often on the side, sometimes half way out of the cell, and occasionally free. The protoplasm was ordinarily narrow, but sometimes wide. A few cells were met with from which the nucleus had probably escaped. Megaloblasts were quite numerous and presented the same variations as the normoblasts. In addition to these, a number of large oval cells were seen, which contained two nuclei, the long diameter of the cell being about four times that of a normal red corpuscle. In several of these well-marked karyokinetic figures were present. These variations in the erythrocytes of course merely show a severe grade of secondary anemia. The presence of myelocytes in conjunction with the general glandular enlargement and the increased relative proportion of lymphocytes plainly places the case among the mixed forms of leukemia.

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Clinical Department.

AN OVARIAN DERMOID THAT DISCHARGED THROUGH THE BLADDER FOR THREE YEARS BEFORE OPERATION AND CURE.1

BY C. H. HARE, M.D., BOSTON.

GREIG SMITH tells us that "about one of ten ovarian tumors is either entirely or partially dermoid." Though this is a rather larger ratio than that stated by most authors, they are certainly very common. Aumerous cases have been reported which have discharged into the vagina and rectum, but a limited search of the literature fails to bring to notice one which has opened into the bladder, though no doubt some have existed. It is therefore with the hope of putting on record another rather rare case, and of learning from you of such cases, that this one is presented for your criti-

Miss F.. living about forty miles from Boston, a book-keeper by occupation and never married, was twenty-four years old at the time of the operation. Her menstrual life began at fourteen, but had never been regular, the periods, as a rule, occurring every six to twelve weeks, with a flow lasting six days (though the last three were barely more than a staining), and the amount being eight or ten napkins in all. There was no dysmenorrhea.

From a child she remembers hearing different individuals speak of her abdomen as being larger than that of most children.

In the summer of 1887 she discovered what she termed a "movable bunch" in the lower abdomen, but which she could feel only when lying upon the back. She at ouce consulted her family physician, who paid little attention to her story, attributed the swelling to flatus, and gave drugs. This, however, swelling to flatus, and gave drugs. did not remove the mass from her own palpation; and a few months later, after a vaginal examination, he told her it was a fibroid, and referred her to a surgeon here in Boston whom she failed to find on her first visit, and did not seek a second time.

A few months later she consulted another physician in her own town, who told her it was only constipation, but later told her friends that she was pregnant.

In May, 1888, after there had been no menstruction for twelve months, this physician also decided she had a fibroid, and sent her to one of our most loved and

1 Read before the Boston Society for Medical Observation, April 2,

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^{**}Tameron: International Journal of the Angulesi Sciences, January, 1888, 1, 1.

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18 Hayem: Du Sang, 1889, 864.

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most respected general practitioners, whom she saw in July. His surprise at the rapidity of the growth was not concealed from her; but he agreed in the diagnosis of fibroid, yet counselled against operation, telling her that many women had the same trouble without any ill results during a long life. She now went home resigned to her condition, and, as she termed it, expecting to be an invalid forever.

Her physician was next needed August 28th, when, following a sea-bath, she had an acute illness accompanied with fever, and excessive tenderness and pain over the whole lower abdomen: for which she was in bed over two weeks, and under medical care five or six weeks, for so-called inflammation of the bowels.

Recovering from this illness, she, on October 20th, when very hungry, ate a large quantity of beans, which was followed during the afternoon by repeated vomiting, some diarrhea and several attacks of nose bleed. Within an hour or two after vomiting she noticed a peculiar discharge which she supposed came from the vagina, though it only occurred on urinating. Frequency of urination was greatly increased. The amount of urine is not remembered to have been much changed. The character of the urine was abnormal to her eye continuously for several months, but subsequently there were a few periods, lasting a day or two, when the urine was clear and normal to her. Slight vesical tenesmus, occasional incontinence, and almost persistent foul odor to the urine appeared in a few weeks, and were increasingly troublesome until after the operation.

No explanation of these troubles had been given her until they had persisted for eight or nine months, when her family physician was surprised to find that the discharge came from the bladder rather than the vagina; and he proceeded to treat her by irrigating for what was called "thickening of the bladder.

No improvement followed; and, disgusted with doctors, she had no further medical advice until two years later, when she sought a fifth medical adviser in an adjoining town, who was the first to make what proved to be a correct diagnosis, telling her that she had an ovarian dermoid which had suppurated into and was discharging through the bladder. He advised operation, and referred her to Dr. Baker.

Dr. Baker did coliotomy October 30, 1891, three years and ten days after the first discharge from the bladder, removing a cyst-sac originating from the right ovary, the size of a large cocoanut in its collapsed condition. The cyst had a large number of adhesions to the bladder and a few to the other viscera and to the abdominal walls, several of which required ligating. Two of the adhesions to the bladder were about the diameter of a nickel, and so firm and cordlike that we could not tell which one, or whether both did not contain an opening into the bladder until they had been clamped and cut. Only one, however, did contain an opening into the bladder and this would easily admit the finger. The denuded edges of this opening were brought together with interrupted catgut sutures, and this seam of union rolled in and covered by uniting with a continuous catgut suture the peritoneum from either side of the opening. The cyst wall was thick and suppurating on its inner surface; the contents were exceedingly foul, and consisted of several rolls of hair, a few irregularly shaped pieces of bone, and the suppurating products.

ment. The patient returned to her home in six weeks, without any complaints.

This woman gives a history of perfect health up to the time her increasing abdominal size began to be a discomfort. She had no real pain until the time of her so-called attack of inflammation of the bowels in August, 1888. Her discomfort was from pressure alone up to this time. At the time of rupture her physician described the enlargement as fully the size of a woman at the end of a full-termed pregnancy. There was no marked weakness. She continued her work until the attack of pain, tenderness and fever. After rupture into the bladder the abdominal enlargement decreased gradually for two to three weeks, when the abdomen appeared of normal size to her. Yet on the first day she noticed a perceptible loosening of the skin which had been perfectly tight. Her relief was solely the relief from pressure.

She soon returned to her work; but in the following April the bladder became so troublesome that she took an easier position in the same line of work where she continued until the operation. She returned to this same position of book-keeper eleven weeks after operation, and has continued her work without a day's interruption by illness. The menstrual periods soon returned, and have recurred regularly every month, with a flow of three or four days and the use of six or eight napkins. There is a very little dysmenorrhea for twenty-four hours before and after flow begins.

She has been seen twice since the operation, the last time being two weeks ago, when she told me that she had had no complaints to make since her return home.

Reports of Societies.

HARVARD MEDICAL ALUMNI ASSOCIATION.

(Concluded from No. 5, p. 114.)

ANNUAL DINNER.

There were present 160 members and four invited guests. At the close of the dinner the meeting was addressed by the President, as follows:

THE PRESIDENT'S ADDRESS.

FELLOW ALUMNI OF THE HARVARD MEDICAL SCHOOL: - The most important event of interest to the medical profession of this State, and pari passu, to this Association, is the passage, since our last meeting, by the Legislature of Massachusetts, of an act to provide for the "Registration of Physicians and Sur-Although the omniscient Washington sought to indicate to this community in 1775 the wise course to pursue towards the medical profession by appointing persons to examine the surgeons and surgeons' mates in his army here, and thus instituted the first medical examination of candidates for practice in this State, we, forgetful of his precepts, have been one of the last of the States and Territories of the Union to take a meagre step to preserve the health of our citizens from the insidious attacks of the human sharks who have for so long been unrestrained in their attacks upon the health and wealth of our people. does not go very far, but it provides penalties for the assumption of the title of Doctor (of Medicine) or Excepting a mural abscess, the patient had a perfect M.D. by those who are not entitled to these designaconvalescence. The bladder received no further treat- tions. It does not interfere otherwise with the plying

of their trade by "clairvoyants, or persons practising hypnotism, magnetic healing, mind-cure, massage methods, Christian science, cosmopathic or any other method of healing." We have, therefore, advanced a little from our former condition, which was comparable to that prevailing among the ancient Babylonians who, according to Herodotus, "carried their sick into the market that all who passed by and had ever had or seen the like distemper might give their advice and encourage them to try what themselves or others had used with success in the like case." The passage of this medical act was, of course, chiefly due to the exertions of the medical profession which, as a body, is always ready and eager to work for the preservation of the health of the community, even though they clearly see that success means to them a diminution in their opportunity to earn a livelihood. While I would not venture to affirm that physicians individually differ in their motives or natures from the rest of mankind, they certainly do manifest a marked indifference to their personal interests when confronted by problems affecting the health of the community. Witness their insistence on compulsory vaccination, on the purification of the water-supply, on the safe disposal of sewerage, on the drainage of swamps to diminish malaria, on the sequestration of those afflicted with contagious diseases such as cholera, yellow fever, diphtheria, scarlet fever, etc. I maintain that the disinterestedness of the medical profession in seeking to expel from our State the herd of quacks that maltreat our citizens is just as genuine as though they were dealing with a plague of locusts. We must learn to disregard the ignoble motives attributed to us by those whose only guides are their own guilty consciences. What a contrast was presented four weeks ago in Washington. In the capitol of this country the élite of the nation, those elected by the people to guard their interests as a whole and see that in measures taken for the public good no injustice was done to individuals or classes, were bartering their votes, were deciding public measures which meant disaster and ruin to hundreds of their fellow countrymen, not on the merit of the questions, but on the effect the publication of their votes would have upon their subsequent political careers. Before them in committee were appearing representatives of nearly every industry and trade of the country, and not a few professions, pressing their claims for favoritism in tariff duties by which each might extort a little more profit from the pockets of the people. Finally a committee was taking evidence to show whether or not the representatives of the people had made dishouest use of their positions to enrich themselves at the expense of their constituents.

At the other end of Pennsylvania Avenue, in the Congress of American Physicians and Surgeons, the leading members of the medical profession of the whole country were discussing measures, not only for the advancement of science, not only for the cure of disease, but for the prevention of disease; in other words, they were devising and disseminating means for reducing the volume of their business and its attendant profits. To be specific, on the second page of the programme, there were three papers read to demonstrate the dangers to health of sewer gas and the means of avoiding them, and three papers on the means of controlling the spread of leprosy. Further illustration is needless.

To return from this digression to the immediate table:

object of our concern, the Medical Department of Harvard University, so-called. I can report a prosperous year, but dare not dilate in detail upon this theme lest I forestall the report of your committee, as I did in a measure last year.

A few changes have taken place in the faculty, Prof. H. P. Bowditch, after serving as Dean for many years has been succeeded in office by Prof. Wm. L. Richardson.

Two new scholarships have been established during the year, one to be known as the Charles Pratt Strong Scholarship, amounting to \$3,700, made up by the contributions of the friends and patients of the late assistant in gynecology; and one to be known as the Lewis and Harriet Hayden Scholarship, from a fund of \$5,000 received by bequest for the benefit of any colored student. That more such scholarships are greatly needed is manifested by the fact that forty-two applications are now on file for the twelve scholarships at the disposition of the Faculty.

Commencement Day, to-morrow, marks the completion of the quarter-century since the installation of Charles W. Eliot as President of Harvard University. I cannot set forth adequately the details of the complete revolution in the system of education which his keen insight and indomitable energy have effected throughout the whole university, but must refer you to the number of the Harvard Graduates' Magazine for June, 1894, where may be found an admirable contrast of the former and the present conditions of education in the Medical School, by the present Dean, Dr. W. L. Richardson.

To illustrate still further the immense contributions made to the funds of the different departments of the university since President Eliot's installation, I have had these tables compiled from the Treasurer's books, showing, as has never been done before, the proportion which each department has received from 1869 to 1893 inclusive, twenty-five years. The Medical School received in

1871					\$5,000.00
1872					1,422.18
1873					4,200.00
1879					2,000.00
1880					54,545.20
1881					175,224.60
1882				·	15,600.00
1888					31,259.58
1884					16,969.66
1885					36,265,11
1886					3,259,41
1889					14,760.00
1890					52,345.00
1891					22,570.00
1892					7.000.00
1893	:				49,071.25

The total receipts from gifts and bequests for all branches of the university during these twenty-five years may be summarized as follows:

College .	•				\$6,126,932.54
Medical School					491,469.29
Lawrence Scien	tific	Sch	ool		116,698.48
Divinity School					243,918.68
Law School					278,521.25
Dental School					22,070.85
Veterinary Scho	юl			•	2,860.00

The continued decline in number of college and scientific-school graduates in the entering classes of the school is again emphasized by the President in his annual report by the publication of the following table:

							G	raduates.
1884								58.9 %
1885								33.3
1886								46.8
1887	,							1 5.
1888								38.8
1889								84.4
1890						. •		38.
1891								36. 8
1892		•	•	•	•			28.2
1893							•	23.

This can only be intrepreted as showing that the governing boards of the university have not properly considered the reciprocal needs of the college and the professional schools. The former is losing students, the latter are being forced to admit students less well prepared to begin their strictly professional duties.

I have the pleasure of introducing Dr. W. W. Keen, Professor of the Principles of Surgery and of Clinical Surgery in the Jefferson Medical College of Philadelphia.

DR. W. W. KEEN.

Your President was kind enough to ask me to speak on the subject of Medical Education. It is a well-worn theme, especially before you, where you have such elaborate reports — and I am glad to say such encouraging reports — from year to year of the progress of this great school; but there are still some points, it seems to me, of value which we can consider here.

I remember very well indeed, in the days of the elder Gross, hearing ad nauseam of medical education and the progress that we ought to have — bushels of talk and thimblefuls of action; but, after all, these discussions were not without their results. They were leavening the whole lump of the profession. They were making the profession the backing of all the progress that we have seen within the last few years; and I am sure that the medical schools — even, I believe, Harvard University itself — would never have taken these remarkable steps in advance in the last few years were it not for that very constant talk, that very constant working of the leaven throughout the profession.

There has been certainly a remarkable wave of medical progress going over this country in the matter of education. It has been demonstrated, first of all, by the creation of the State boards of health, and especially by the noble Illinois State Board of Health, a board which has done more for medical education than any other instrumentality, I believe, in this country, because it has set the pace. These boards have now been established throughout almost all the States, and they have been followed by a still more notable advance, namely, the establishment of boards of medical examiners, wholly independent, as they ought to be, of the medical schools themselves. Another very remarkable indication is the adaptation that our universities and colleges are making to the various professional schools, medicine among them. Look at the large number of schools of biology, of courses in various colleges leading up to the study of medicine; and what does this mean but that the medical schools want better men and that the colleges are going to furnish them? In addition to this a Department of Pedagogics was established in connection with the Pan-American Medical Congress; and I hailed it with great delight, when I saw on the programme of the last American Surgical Association in Washington, that one of the leading papers was by our friend Dr. Billings, on

"Methods of Teaching Surgery." 1 It developed what to my mind was one of the most fruitful, and to me personally one of the most useful, debates ever held in that body. Dr. Billings considered three points: who were to be taught, what was to be taught, and how it was to be taught. The very scope of his paper prevented what is, I think, of as much importance as the methods of teaching, namely, the consideration of the men who teach. I would like much to see delivered before all of the boards of trustees of our medical schools in this country - and I think the faculties might benefit quite as much — a course of lectures on how to run a medical school and who ought to be made professors in it. They should not select men because they were their friends, not because they were their family physicians, not because they were related to them in any way; but there should be one sole requisite for the position of a teacher, and that is the best man to teach that department. Moreover, I should be very sorry indeed to see the day when the practitioner and the professor are to be divorced. do not know anything that is more enlivening, that renders a man's lectures more juicy, more meaty, than to have the varied successes, failures, perplexities and responsibilities of an active practice. The men on the benches before him are those that are to follow him and his colleagues in the actual practice of the profession, and what they need is not only the science but the application of that science. I care not in what department - be it chemistry, be it anatomy, be it pathological anatomy, be it any of even the purely scientific departments, except possibly physiology if a man wants to teach it in a live way, in a way that will make it stick, in a way that will make it interesting and attractive, he must make the application of almost every fact in his scientific teaching to practice; he must show their practical bearings by cases drawn from his own practice. Along with that, however, I believe that the time will come when the men who are professors in our schools and at the same time practitioners, will largely change their methods. man who is engrossed in a large private practice often finds it difficult to give that amount of time which the newer education and the newer method of instructing classes in small sections requires; and I believe that in the future the professors in our medical schools will be more and more restricted in their private practice until eventually they will practice in the hospital and give their lectures, and do little or no outside practice. This will require, of course, very much larger salaries than now can be given where the income of the school is derived from fees, and in order to do this it is requisite to have larger endowments of the medical schools.

Dr. Keen then alluded to the poverty of American medical schools in laboratories; this was due to lack of funds. He quoted in support of his assertion some figures from a recent address by Professor Welch, of Johns Hopkins University, to show that, in 1893, the permanent investments independent of buildings, yielding revenue to all the medical schools in this country were but little over \$600,000, and the endowments yielding revenue to theological schools were \$17,000,000. These figures apply to medical schools, not hospitals, for there the community has been wonderfully and praiseworthily generous.

One other, I think, of the most important things in

1 See Journal, vol. exxx, p. 585.

connection with such professors, also, in the medical schools and one that ought to be a duty, is that of visiting other great medical centres and seeing other men, surgeons and physicians and bacteriologists and pathologists and chemists and clinicians do their work. It ought to be a duty, as well as a pleasure, to every man who is a teacher, to see other men teach; and he will learn either one of two things, how to teach better, or, in some cases, how not to teach.

I do not know a better indication for the future of the medical profession in this country than the very fact of the increased requirements for admission that were put down for 1896 in this ancient and honorable school. Now it is perfectly true, as has been urged and as was urged in Washington, that we must remember that medical education is for the average medical student, that it is for the medical students who are going to the country cross-roads to settle, as well as for the men who are going to settle on Beacon Street. Harvard College can afford to take an advanced She can afford to do so, because she is Harvard College, and for that reason she can set the pace. You need not fear but that there will be all over the country plenty of other schools that will educate the cross-roads doctor, plenty of them.

I believe it will be only a short time when you will fling your banner to the breeze and say that A. B. or its equivalent shall be the absolute requirement for admission to Harvard Medical School. The best evidence of this is the large number of colleges that, within the last two years, are insisting upon a four-years' course. It was but last week, in reading in the medical journals, that I found, way off in distant Oregon, that the State Board of Medical Examiners had issued notice that after 1898 no person would be admitted to practice in the State of Oregon who had not had four years of medical study. We must look to it that in the East we are not outdone by the West and our States must exact this definite requirement, or we will be over-run with the horde of doctors that cannot find a place in the West.

Among the methods of study I can only allude to two. One is that we have not in this country such service as there is abroad by the chef de clinique, at least, not so far as I know. Only the other day I was reading a report by Dr. Laurent, of Brussels, of his observations in the medical schools of this He remarked, in the very beginning, that some people thought there was not very much to learn from this country; but he added very significantly, "On marche là-bas à pas de géant." I believe that another giant stride is going to carry us to a position where men from abroad will be able to come here and get in our schools what our students get to a large extent abroad from the chefs de clinique.

In conclusion, Dr. Keen said: I believe thoroughly in recitations. I am glad to see that Harvard has established recitations. I believe they ought to be official, they ought to be compulsory. Every man of the class should go before the examiner from day to day, and not merely before the professor for an examination at the end of his term; and he should be marked on those, and his standing should be determined by his recitations as well as by his final examination. But, gentlemen, I do not believe that the time will ever come when the living voice, when the personality of the speaker is going to be forgotten and to be discontinued. I shall never forget, for instance, one story finishing practically at the entrance examination their

that was told by dear old Charles D. Meigs, whom you remember, perhaps, as being rather worsted in the fight with Dr. Holmes over the contagiousness of puerperal fever. I shall never forget one illustration he made of the point which he wished to inculcate in his obstetrical lectures, that the child should be put to the breast very early. He gave a description, which I will not attempt to rival, for it is one of the most beautiful pieces of poetry in prose that I ever heard, of the birth of Cain. He described the beautiful bower to which Eve retired, and the pains that she suddenly felt, which, for it was rather a novel experience to her, she thought must be due to some grapes that she had eaten the day before that had disagreed with her. After describing the increasing pains, he told how, finally, she had fainted away for a moment, and awoke to find her slippery little Cain, and, lifting him up in surprise, he fell into nature's cradle and immediately took the breast. It was a very simple little story; but it was beautifully told, and to this day, the description is as fresh as ever to me in its lesson and in its grace. Again, I shall never forget the expression and the power of Samuel D. Gross. When lecturing on diseases of the joints, he began with the question of treatment, and said, looking around the amphitheatre very quietly, "The first requisite, gentlemen, in the treatment of inflammation of a joint is rest, rest," - and, rising to his full height and folding his arms, he swept forward majestically and said, "In the name of God, REST!" Now, you might write that fifty times in a book, and you would forget it the next minute; but once hear it from the lips of Gross, and I would defy you to forget it.

DR. WILLIAM OSLER.

Dr. Chadwick asked me to come prepared to tell you what we are doing in the way of medical education at the Johns Hopkins. As you know, that institution was started under somewhat peculiar circumstances. Although the grant was large, both to the hospital and to the university, it was not found sufficient, as time went on, to warrant the establishment of all branches of a medical school. A special fund of half a million of dollars was raised by the ladies, and with this we were able to organize. For the first time in the history of medical education in this country a school was established almost independent of the fees of the students; and in that blissful condition we are at present, though we still have large wants for build-

ing purposes.

There are two points in which the Johns Hopkins Medical School differs from the other schools in the East. First, as to the preliminary requirements. We require the degree in arts or in sciences as evidence of a liberal education; and we require also a specified amount of training in physics, chemistry and biology, with a reading knowledge of German and French. The instruction in physics, chemistry and biology is required to be of such a character that the student must have spent two years at each, with somewhat extended laboratory courses. Here is, in reality, the only essential difference between the Hopkins School and the other schools. I think myself that the time required to enable a student to get that amount of knowledge may be too long. The ideal arrangement is such as prevails at the University of Cambridge in England, in which the men pass into the university,

classics, their general literature, and a certain amount of their elementary biology. Then, the first two years are devoted to the sciences. A man graduates A.B. in the natural science tripos at the end of his three years; and at the end of his five years receives his M.D., so that his courses may run concurrently. At present, as we have arranged the curriculum, it is seven years — three years in the chemical-biological course of the university and four years in the medical school. That, it seems to me, is altogether too long. Some such arrangement as exists at Cambridge will become ultimately. I believe, the arrangement of the medical schools connected with the universities in this country; students will be able to take in the academical department certain of their scientific courses, which will count for the medical degree.

I hardly know how to deal with the other question, the second point to which I refer — it is an extremely delicate one - namely the subject of coeducation. was warmly in favor of it, particularly when the ladies came forward and offered half a million of dollars. I come here to-day, with tears in my eyes and sorrow at my heart, to tell you that coeducation has proved an absolute failure, from one standpoint. When I tell you that 33.8 per cent. of the ladies, students, admitted to the Johns Hopkins Hospital at the end of one short session are to be married, then I tell you that coeducation is a failure. If 33.3 per cent. fall victims at the end of one session, what will happen at the end of the fourth?

DR. WILLIAM M. POLK.

It appears that the subject for discussion before every alumni association is that of medical education, be it coeducation or not. It would appear, then, that I am expected to say something upon this subject before the alumni of an institution which has the proud consciousness of standing at the fore upon this subject. The position occupied by the distinguished gentlemen who have preceded me forbids perhaps my standing before you in such a rôle; but I may perhaps take a cue from a hint dropped by Dr. Keen. It would appear from what has been said that this matter of the education of the people, that this four years' course is a thing which must be taken up and pushed to the fore in such a way as to give to us all that the most jealous advocate of medical ascendency can desire. But the question suggests itself as to whether this is to be managed along the old lines, or whether new methods are to be introduced. We all know what the old lines were, the repetition, the endless repetition deemed necessary, perhaps because of the untrained mental condition in which many of those who came up before us found themselves. Now, if this sort of thing is to prevail here, at Harvard College, I can only say that it will prove a bitter, a most dismal failure; but, on the contrary, if there is a merging, a proper merging. into the general system of education which is given forth by the university, then I can see naught in it but the intimation of the very highest point of educational attainment that can be wished for by any of us.

one which should be held to the fore as firmly as possible. While it may be true that there are portions of are too many lawyers, too many tailors, too many, in our country which, needing only fifty-cent doctors, can- fact, in almost every trade and occupation in the land, not afford to acquire the five-dollar education, still that in the opinion of the doctors and of the tailors and of is no reason why science should be converted or used the lawyers and so on, each for his own group. It

as a milch cow, as one of my predecessors suggested. We must ever have the best to the fore. We must ever have the best interpretation of our science if we wish to bring the mass up to its proper place in viewing the problems of medical education. Therefore, if you pretend here to erect and to conduct a medical school upon the highest plane, then let me beg of you, let me urge upon you, never to cease your agitation until such time as you can force the authorities of your university to give you a proper footing within its portals. You should be no mere annex; you should be one of the spires of that grand cathedral building which, embodying within the walls of its mainer portions the science of the best general education, has as its spires those that lead up to the development of the very highest kind of training in the several directions towards which it improves, medicine on the one hand, the law upon the other, general excellence in literary work upon the other. And yet, if medical education is to be conducted with all of this elaboration, what will be the condition of the individual who begins to depart from the highest points of that medical spire which we propose to erect? Will he find himself in touch with the plane upon which he is compelled to live? That depends entirely upon the view which he takes of the mission which is before him. If he believes that he starts forth upon his mission of life rather to guide people than to gull them, he will find in that which is around him every incentive to a continuation of his work upon the highest possible plane that Harvard or any other institution can erect.

DR. JOHN 8. BILLINGS.

For the last six years I have had the honor of being one of the visitors of the medical school appointed by the Board of Overseers. I do not suppose that it would be altogether proper to tell you about the arduous labors of that committee or of the probable influence which it has had in bringing about the millenium, immediate and prospective, which you have heard described by the other speakers; nevertheless it has given me some insight into what has been going on here, into the problems which have been before the Faculty, and which have interested all the graduates of the school, and therefore I feel as though I knew a little about what had been going on at Harvard. I do not propose to enter into an enlogium of what has been That is entirely unnecessary. It is sufficient to say that Harvard is now, as she has been, in the very front of the medical schools of this country in all the improvements that have been made.

You know, perhaps, that for the last fifteen years the death-rate and the birth-rate have been diminishing in all civilized countries. Whether that has any definite relations to the improvements in medical education, and what its connections are with the improved results of abdominal section, is a matter of very considerable interest, which I understand that my friend Professor Polk is making a study of, and I await his conclusions with a great deal of interest.

You have heard — not to-day, except inferentially in previous speeches - a very common phrase, that The question of preliminary preparation, it seems, is there are too many schools, too many doctors, too many students. Also, I hear in other quarters that there does not appear to me that there is likely to be any very great change in that respect by improvements in medical education, here or elsewhere. It is perfectly clear that it is the duty of a great university like Harvard - of the Medical School - to carry its standard to the highest possible point; and with all that has been said about the necessity for preliminary education I very cordially agree. Man can, as you all know, only judge of these things from his own little experience. He has to apply his own measure to it. Well, some thirty-three years ago, a long time ago, "in the days when Plancus was consul," I graduated in medicine in a two-years' course of fivemonths' lectures each, the lectures being precisely the same for each year. I had become a resident in the hospital at the end of the first year's studies. There was I a resident of the City Hospital of one hundred and fifty beds, where I was left practically alone for the next six months, the staff not troubling themselves very much to come during the summer time, when there was no teaching. Remember this was a long time ago, "when Plaucus was consul." In those two years I did not attend the systematic lectures very regularly. I found that by reading the text-books, I could get more in the same time and with very much less trouble. I practically lived in the dissectingroom and in the clinics, and the very first lecture I ever heard was a clinical lecture. The systematic teaching of those times I have had to unlearn for the most part. There is a new chemistry, a new physiology, a new pathology. What has remained is what I got in the dissecting-room and in the clinics. The only advantage that I can see that I had, was the fact that I had had four years in college before I commenced to study medicine, that I knew Latin and Greek and French and German after a fashion. It is very true that in my subsequent experience the Latin and the Greek has been of very much more use to me than it is to the average physician. Nevertheless, I feel inclined to insist more upon the advantage of the oldfashioned classical studies, the regular course for the A.B., without any special tinkering to fit it to a medical degree than perhaps many others now do, believing that it is peculiarly well suited to enable the man to come to his medical studies knowing how to study and how to quickly separate the wheat from the chaff.

Walter Besant tells a story of a girl who was brought up in a gardener's lodge in a large cemetery near London. She had never been out of that cemetery. All that she knew of the outside world was a large dusty road that led away from it over the hill, on which, at certain times of day, processions came up and entered the cemetery. She supposed that all people outside were engaged in something that had relation to the undertaking business; that some of them made coffins, some of them black coats - everybody, she presumed, wore black outside. The head undertaker was probably the prime minister or chief governor outside, and, in fact, everything bore relation to what she saw in the cemetery. Such a mode of thinking is apt to prevail in all men for the greater part of the time so long as they confine their view to their own immediate interests. So long as the doctors consider only the interests of the medical profession, the privileges of the medical profession, and the relations which they would like to have the medical profession bear to the rest of the country and the legislation which they desire for its benefit, so long will they remain in the position of the little girl in the cemetery. It is desirable to have broader views. And it is fortunately the case that a practising physician, brought as he is into relations with all classes of the community, does, usually take very much broader views. He sees more of the many-sidedness of human life and of human nature than any other professional man.

The education of the doctor which goes on after he has his degree is, after all, the most important part of his education, for even at the end of your four-years' course, given to men who come to you with the degree of A.B., it will be what he learns in the next two years after he gets his medical degree that will probably be of the greatest importance to him for his practical success in life.

We have found, as the result of our experience in the army and navy medical examining boards, that the men who have had a college degree before they began their study of medicine are a little more successful than those who have not, probably in the proportion of about 30 to 25; but the men who have had one year's residence in a hospital after they have got their medical degree pass the army and navy boards in twice as great proportion as those who have not, but who come directly from the benches of the school or from the balls of the crammer without the clinical work. In the interests of the community, and from the purely practical side of the matter, for the benefit of the sick and suffering, it is the clinical teaching which is of the greatest advantage and importance. The securing of the best facilities for clinical teaching by thoroughly competent men is the most important thing in the organization of a medical school. Two or three schools in this country have their own hospitals and control them. The majority of them, however, must make use of the city hospitals or of private hospitals, and must take as teachers men who have appointments in those hospitals. As a rule, those appointments are good, and are made with reference to the teaching ability of the men: but it is not always so.

It seems to me that these annual gatherings of the Harvard Medical Alumni are not only very useful but very delightful and very interesting things. Here the young enthusiast, filled with ideas of reform and progress, can come and have it out with the conservative elders who prefer to see what they consider to be high kicking and skirt dancing carried on in some other quarters. It is very good to come back to the old scenes of youthful ambitions and dreams and labors, to see the old halls and the teachers, and then to take a fresh start, realizing the tilt and swing of the song of the old trail. Do you all know that song of the old trail? Perhaps not.

"To see the old stars wheel back once more
And blaze in the velvet blue
Where the blindest bluffs blud good, my friends,
And the wildest tales are true.
And the men bulk big on the old trail,
Our own trail, the out trail; and life runs large
On the long trail, the trail that is always new.

"There's a whisper down the field, where the year has shot her yield And the rick stands gray to the sun.

And the rick stands gray to the sun,
Singing, 'Over then, come over; for the bee has quit the
clover,
And your spring and summer's done.'
We have heard the call of the off-shore wind

We have heard the call of the off-shore wind And the voice of the deep-sea rain; We have heard the song, 'How long, how long?" Fall out on the trail again. "The Lord knows what we may flud, my friends, And the deuce knows what we may do, But it's time to turn on the old trail, our own trail, the out

trail. Pull out, pull out on the long trail, the trail that is always new."

DR. GEORGE B. SHATTUCK.

I would like to condole with you over the position which your nominating committee have put you in. I know a few things which probably you don't know. You may be surprised to hear it, but I was in Washington with your distinguished President and at the time that we were both studying the inferiority of sen-In a moment of indiscreet and ators to doctors. ebullient enthusiasm - I think your President at that moment had just procured a promise from Dr. Polk that he would come on and speak to you on this occasion — he did not forsee the official position which I was to be called upon to occupy, and said to me, "I tell you what it is, I have got some mighty good speakers for the Alumni Association dinuer, and what is more to the point, there are not any more left in the country. I am going to get out, and it is going to be a mighty poor business for my suc-Well, your excellent President came to me about eleven o'clock this morning, having evidently forgotten this, and he said: "I would like you to be punctual at the dinner to-day, because there is a possibility that you may succeed me in the chair, and if that should turn out to be the case I want you to be there so that I can present you." I said, "Thunder!" He said: "Oh, well, you need not bother. I shall not want you to speak. I have got some really good speakers, and plenty of them. You need not trouble yourself." Now, gentlemen, it is only fair that I should tell you this. But I don't want you to be alto-gether discouraged. If he has exhausted all the good speakers in this country, I am not going to give up. I am going to sail for Europe the middle of next month, and we will import some.

Then the company dispersed.

AMERICAN PEDIATRIC SOCIETY.

SIXTH ANNUAL MEETING, WASHINGTON, D. C., MAY 29, JUNE 1, 1894.

(Concluded from No. 5, p. 117.)

THIRD DAY. - THURSDAY.

DR. W. S. CHRISTOPHER, of Chicago, read a paper entitled

THE NUTRITIONAL ELEMENT IN THE CAUSATION OF NEUROSES.

He said the following positive factors were present in all neuroses: (1) heredity, (2) anemia, (3) some local condition acting reflexly as the immediate exciting cause. He preferred the use of the term "mal-nutrition" to that of "anemia." The only clinical estimate of the nutritive value of the blood was that obtained from examination into the quantity of hemoglobin, and the number of blood corpuscles; yet such an examination did not give satisfactory evidence. He would define a neurosis as a group of phenomena resulting from such abnormal action of tissue or tissues | right ventricle because the pulmonary orifice was at as might be dependent upon one or more of the follow-ing conditions: (1) abnormal chemical construction of small. The little finger could be passed from either

nutritive element supplying the tissues, (3) derangement of the nerves. Each individual requires not only a certain bulk of food, but also a certain variety to meet the various chemical requirements of the organ-If food were sufficient in kind but deficient in quantity, the result would be complete starvation. Incomplete or partial starvation occurred when the food was deficient in variety. This partial starvation was an important factor in the production of neuroses. It was more commonly observed in infants than adults. In infants it presented itself most often in the form of fat starvation, which need not be a matter of surprise in view of the very large consumption at the present time of commercial infant foods. Proteid starvation was much less common. In addition to interference with the food-supply as a factor in producing the changes in the tissues, there were other factors, such as abnormal nerve impulses, direct toxic action and pathological conditions affecting the organism (such as syphilis). In conclusion he stated that neuroses were always dependent upon abnormal chemical structure of the tissues, and such structure might result from one of three factors: (1) heredity; (2) deficient constructive metabolism, which might follow from insufficient food-supply; and (3) deficient destructive metab-

DR. ROTCH, of Boston, indorsed what had been said in the paper about fat starvation, and remarked that infants varied greatly in their individual requirements in regard to the quantity of fat needed by the organism.

DR. WILLIAM T. NORTHBUP, of New York City, next read a paper entitled

A CASE OF CYANOSIS.

The case was of interest because it tallied exactly with the description usually given in the books. The patient was a boy, four and a half years of age, who, although appearing well nourished, had pale cheeks and dusky lips and finger-tips. He was subject to attacks of dyspnea and cyanosis after meals, and three or four times each week he would have very severe attacks of dyspnea. Physical examination showed a fine wave at the left third interspace on palpation; a soft, purring thrill over the base of the heart; apex beat half an inch outside of the left nipple line; cardiac dulness extended from the right sternal border to the left nipple; no dulness to the right of the sternum; a loud, harsh and systolic murmur along the left margin of the sternum distinctly localized at the second left interspace and third rib; the murmur not transmitted to the left nor along the aorta. The second sound of the heart was almost inaudible. At the autopsy, the right ventricle was found to be markedly hypertrophied, tilting the heart to the left. The apex was to the outside of the nipple line and no part of the heart was to the right of the sternum. The aorta was distended; the pulmonary artery was smaller than normal, the ductus arteriosus impervious; the foramen ovale practically closed; the left ventricle normal; the walls of the right ventricle thicker than those of the left; the septum incomplete at the auricular end; the conus arteriosus constricted. A probe could not be readily passed from the pulmonary artery into the the tissues, (2) abnormal chemical composition of the ventricle into the aorta. The case was one of early

fetal endocarditis constricting the conus arteriosus. The endocarditis must have occurred early in development before the septum was completed, so that Nature could elect the very best point to effect a compensatory circulation. The aorta, receiving a direct stream of blood from both ventricles, was distended. The pulmonary artery was receiving little blood, and remained small.

REPORTS OF COMMITTEES ON NOMENCLATURE OF DISEASES OF THE MOUTH AND OF THE GASTRO-ENTERIC TRACT.

Dr. T. M. Rotch, the Chairman of the Committee on the Nomenclature of Diseases of the Mouth, then presented the report of the Committee. He said that there should be uniformity in the designation of diseases, so that a disease would be called by the same name wherever written or spoken about, and the nomenclature offered by the Committee was intended to aid in accomplishing this result. The term "stomatitis" was taken as a basis. From this four divisions were made: (1) stomatitis catarrhalis, (2) stomatitis herpetica or aphthosa, (3) stomatitis ulcerosa, and (4) stomatitis mycetogenetica. These were again subdivided, as, for example, stomatitis catarrhalis into (1) stomatitis secondary to the exanthemata, and (2) traumatic stomatitis.

The report of the Committee was accepted.

The Committee on the Nomenclature of Diseases of the Gastro-Enteric Tract presented its report. This report consisted of a schematic classification of these diseases. Two grand divisions were made—gastric and enteric; and each of these divisions were subdivided into (1) developmental, (2) functional, (3) organic. These were subdivided more or less minutely. This report was accepted after some slight opposition on the part of two or three of the members.

Dr. DILLON BROWN, of New York City, read a paper on

THE EARLY DIAGNOSIS OF POTT'S DISEASE OF THE SPINE IN CHILDREN.

He said that the importance of an early diagnosis could hardly be overestimated, as on it depended very largely the future welfare and comfort of the child. The symptoms might be considered under three groups: (1) the symptoms of all cases of tuberculosis, such as peculiar night-cries and evening rise of temperature; (2) a constant symptom of vertebral caries, such as peculiar attitude and rigidity of the spine; (3) the symptoms secondary to interference with the spinal cord and nerve, such as paralysis, dyspnea. It would sometimes be difficult to exclude cerebral disease and rheumatism. In all cases of curvature of the spine, the deformity was rounded in shape. Psoas contraction was almost pathognomic of spinal caries. It was the only cause of psoas contraction in which there was a kyphosis of the spine and limitation of movement in every direction. In fracture of the spine, in addition to a history of a sudden deformity, there was absence of all the characteristic signs except the deformity.

FOURTH DAY. - FRIDAY.

Dr. William T. Northrup, of New York City, read a preliminary paper on

INFANTILE MYXEDEMA,

as illustrated by two cases.

The first case was that of a female, nine years old, the fifth child of healthy Irish-American parents. Its development had practically ceased at the age of nine months, and at the age of nine years it was mentally no older. The head was large, the complexion of a peculiar tallow-like appearance, the hair thin, the tongue swollen and protruding, the lips pale, and the soles of the feet dry and parchment like. There was the characteristic flattening of the bridge of the nose, and a tilting back of the nostrils. The thyroid gland did not seem to be notably enlarged. The only word the child said was "Dada," and it would sit placidly for a long time in a chair. It presented some evidences of rickets. After observing the natural course of the temperature for four days, it was found that this varied between 97.5° and 99.5°. Treatment was then begun with a reliable glycerine extract of the sheep thyroid, and the doses regulated so as to keep the temperature just below 100° in the rectum. Four minims of the extract was the highest daily dose. After a few days of the treatment it was noticed that the tongue was unmistakably smaller; and at the end of three mouths, the child was found to have improved considerably. The countenance was brighter; the child was goodnatured; there was no excessive perspiration; and there had been some increase in height.

The second case was that of a child twelve years of age, and was not so typical in appearance. It would answer very slowly when asked its name, and beyond this rarely spoke. The child was still under treatment.

Dr. WILLIAM MOSLER, of Baltimore, next read a

THE SUCCESSFUL TREATMENT OF A CASE OF IN-FANTILE MYXEDEMA WITH THYROID EXTRACT.

This case had been under treatment since March of last year. The patient was three years of age, and a typical cretin. There was no thyroid enlargement. At first the child took an amount corresponding to about one-fourth of a gland in the twenty-four hours. When seen about one month ago a remarkable change was apparent. There was an entire loss of the cretinoid aspect; the flesh was firm; the nutrition was much improved; and the improvement in the mental condition and in the speech was remarkable. A second case was reported in which the result was not nearly so favorable. In this one, the patient was a cretin, nineteen years of age. The treatment had not been continued so systematically, and no very decided improvement had been noticed.

Dr. W. L. CARR, of New York City, referred to a case seen by him two months ago, in which there had been decided improvement in the mental condition and in general nutrition.

Dr. FORCHHEIMER, of Cincinnati, referred to a case in which the treatment with the thyroid extract had resulted in producing a condition of excitement akin to mania.

Dr. M. EMMET HOLT, of New York City, then read a paper on

ACUTE PYELITIS IN INFANCY.

The first case reported was that of a male infant, eighteen months old, who had been taken suddenly ill with a temperature of 103.5°. There was a marked febrile movement for about five days. An examination of the urine showed an abundant deposit of pus, but no casts. The pus gradually diminished, and at the



end of three weeks had disappeared. Twenty months later, it was found that there was no return of the urinary symptoms, and the child was in all respects well. The second case was a female infant, eight months of age, in whom the first symptom was chill and a marked rise of temperature, the temperature reaching 105°. Pneumonia was positively excluded. Here also the urine contained considerable pus, which, however, slowly disappeared under the administration of two-grain doses of the citrate of potash. The pus disappeared in the course of about three weeks, and sixteen months later the patient was in good general condition and free from urinary symptoms. In the third case, after the initial chill and rise of temperature, there was a very irregularly remittent temperature, which did not yield to the administration of very large doses of quinine. The spleen was not enlarged. On the fourth day, slight straining and apparent pain on urination were noticed, and a specimen of urine was taken and found to be strongly acid and to contain considerable pus. The high elevations of temperature and the repeated chills were noteworthy features of this case. It was over three months before the child had thoroughly recovered. The urine was examined at intervals, and continued to show pus cells for some time.

DR. SEIBERT asked Dr. Holt upon what he based his differential diagnosis in the first case between purulent cystitis and pyelitis, and in the other case between purulent inflammation of the kidneys and purulent pyelitis. He thought the first case was really one of cystitis.

DR. MOSLER remarked that when there was no enlargement of the spleen and the symptoms did not yield to quinine, malaria could be confidently excluded.

DR. FORCHHEIMER said that he had frequently seen cases of low grade intermittent fever which did not yield to quinine, and he had also found that in cases of malaria the spleen was not always enlarged.

Dr. Holt said that the absence of mucus, the fact that the urine was acid all the time, and that there was no evidence of vulvo-vaginitis, seemed sufficient to exclude cystitis in the first case. The second case might have been malaria. He agreed with Dr. Mosler regarding the diagnosis of malaria.

DR. GEORGE N. ACKER, of Washington, D. C., exhibited

A MIRROR WRITER

in the person of a colored boy, ten years of age, whose writing can only be read when reflected in a mirror. He had been born prematurely and was very dull during early infancy. He had many convulsions and when between two or three years of age, fell and injured his head. From that time there was an increase in the frequency and severity of the convulsions. He had also had chorea for a period of three years. He was naturally left-handed. The first formation of words was what was known as "mirror writing." He now wrote with equal dexterity with both hands. There was a history of insanity on the maternal side of the family, and the father was of a neurotic temperament.

Yellow Fever was imported into Brazil, says Dr. Carvalho, in the *Brazil-Medico*, from New Orleans in 1849, the first cases seen in Rio Janeiro being in 1850.

BOSTON SOCIETY FOR MEDICAL OBSERVA-

J. G. MUMFORD, M.D., SECRETARY.

REGULAR meeting, Monday, April 2, 1894, Dr. Parks in the chair.

Dr. C. H. HARE read a paper describing

AN OVARIAN DERMOID DISCHARGING THROUGH THE BLADDER FOR THREE YEARS BEFORE OPERATION AND CURE.¹

DR. W. H. BAKER: The subject of dermoid tumors of the ovary is full of interest to one who looks back twenty-five years in practice and sees the differences in the successes of the treatment of such tumors. Peaslee was among the early American authors who relinquished the old idea of fetation as a cause of dermoid tumors of the ovary. In his work published in 1872, he dates their origin to congenital trouble, although he does not go into explanation of their formation. It is interesting in such dermoids, with the years that have gone by to see the greater frequency with which we have found them existing. Dr. Peaslee estimates, in 1872, that they occur in about 2 per cent., or 2.5 per cent. of cases of ovarian tumors, but he intimates, also, that with more perfected diagnosis in small dermoids that that frequency might be increased. We hear to-night what Greig Smith estimates - that they occur in about 10 per cent. of all cases of ovarian tumors. It is interesting here as in other branches of surgery to note the frequency at times with which observers in their own practices will see cases of dermoids, and then a long interval will elapse without meeting with them. I think a year, or two years ago I should say, probably about 20 per cent of cases of pelvic tumors presenting themselves that particular year, happened to be in my experience cases of dermoids although that was exceptional in its frequency. Knowing the increased danger in operating twenty-five years ago, for instance, upon cases of dermoids of the ovary, various means were resorted to to try to cure the patient other than by its entire removal through abdominal section; one such method was through drainage of them, and subsequent injection into the cyst cavity. Dr. Peaslee describes the impossibility of curing a dermoid for instance by such drainage, on account of the difficulty of destroying the inner surface of such cyst even in its shrivelled condition. I remember presenting, I think to this Society, in 1878 or 1879, an interesting case of dermoid of the ovary that occurred at the Free Hospital for Women, where such drainage was resorted to through the vagina, stitching the cyst wall to the opening in the vagina, and after removing a large mass of hair and teeth, keeping the cyst wall syringed out, and finally the destruction of the whole interior of the tumor was effected by the actual cautery, - passing the Simm's speculum into the interior of the cyst and repeatedly going over the interior with the Pacquelin cautery, thus destroying its secreting surface, so that the patient was cured, and a few years ago continued to be well. I mention this as an interesting fact in this connection to show how we used to resort to destruction of such tumors sometimes.

Early in my practice I remember removing a dermoid, performing one of the early vaginal ovariotomies, the late Dr. Thornkike being present, she having been a patient of his. In those days it was partic-

¹ See page 135 of the Journal.

ularly adaptable to those cases on account of the less risk to the patient. That leads me to speak of the importance of the removal of dermoids entire. One can scarcely imagine a more unsuitable case for aspiration than a dermoid cyst. However clean your aspirating needle may be going into the cyst, it is going to be very unclean coming out and is going to soil the peritoneum; therefore much harm may be done in the withdrawal of the needle. The dangers of tapping a dermoid cyst years ago led some of the prominent authors of that time advising, whenever a cyst was aspirated or tapped, that the surgeon must be ready to perform an ovariotomy at once, in case iuflammation of the tumor was established. This is one of the rules laid down by Peaslee twenty-three or twenty-four years ago.

The case reported, I think, illustrates two or three things remarkably well. First of all it shows us the difficulty which the general practitioner oftentimes meets in making his diagnosis. Here is a patient presenting herself within a few years when it is supposed the profession should be reasonably skilled in diagnosis, and yet this poor girl passes through the hands of a number of general practitioners without receiving any correct diagnosis. You see how much the character of a young unmarried girl like this may be at stake by the diagnosis made in this instance, mistaking it for a case of pregnancy. This is not altogether infrequent, I am sorry to say. We can hardly underderstand any one of the profession making such a mistake in diagnosis in these days, as was done in this CARO.

We might look with much more charity, perhaps, upon the mistake in regard to the particular character of the ovarian tumor itself. This is a matter in these days of comparatively little importance, so far as the operation is concerned. But that it should be so entirely overlooked seems to be rather remarkable. Certainly. I should feel that our students were not receiving the instruction that they ought to receive if I thought that any of our graduates from our Medical School in the last number of years should make such mistakes as have been made in this case. It shows the importance of more careful examination on the part of the general practitioner, that he may save his patient an amount of suffering, and an amount of good character that certainly was impaired in this case.

The importance of removing the entire tumor at the time of the operation I think is one of considerable moment. The incision should be large enough in the case of dermoids to accomplish this object. The danger of soiling the peritoneum by evacuation of the cyst at the time of the operation I think is considerable, however well you may attempt to keep the edges of the cyst outside of the abdomen. I think the length of the incision is of little or no importance compared to the accomplishment of this result — getting the tumor outside of the abdomen. That accomplished, you have saved the soiling of the peritoneum with the contents of the dermoid. In many other forms of ovarian cysts it matters little, but inasmuch as we cannot tell in advance of the operation always the character of the contents of the cyst, it is well that the opening be made small at first and when the true nature of the tumor is learned, if a dermoid, the incision should be made large enough to remove it entire. When we re-

this rule, the incision will not have to be so very large for its removal.

This case also presents another interesting feature. The cyst wall in these cases is usually thick so that there is comparatively little danger of rupture in shelling it out, although the adhesions may be greater than in other forms of cystoma. In this case, although the cyst wall had collapsed, still from the suppuration that had gone on within the wall itself it was considerably less tough, and was one that I felt would not well tolerate the manipulation of the separation of adhesions. It was also interesting to note the readiness with which the bladder symptoms disappeared with the removal of the tumor.

The case was interesting to me, and I think will be to the whole profession in so far as the rarity of the opening of such dermoids into the bladder was concerned.

DR. WHITNEY: These dermoids are very interesting from the anatomical point of view, and they bring up several interesting questions of structure and cause of growth. The dermoids are usually divided into four classes: first the simple epidermoid tumors which are livid, with a cutaneous membrane, and correspond in every particular with the ordinary wen of the head. The next class comprises the simple dermoid tumors in which there is not only an epidermis, but also structures of the true skin, the sweat and sebaceous glauds. Then the third class are the complex dermoids or simple teratomas, which are like the one the reader has described, and which, besides the presence of hair, sebaceous material, epidermoid scales and skin, have bone with complex structures, especially the teeth. Finally there are the complex teratomas in which are found not only the above mentioned constituents, but also various other structures of the body such as nerves, muscles, well-formed fingers, parts of extremities, intestines and even organs. The transition from one to the other is quite a gradual one. Of these the complex dermoids, with the hair and sebaceous material, are the more common among the dermoid tumors that are found in the ovary.

In the complex dermoids where bone is formed it is apt to be shell-like, resembling the immature bones of the fetal head, and Orth records one case where a child was born, the vagina was ruptured, a dermoid presented and the attending physician thought he had a case of twins. It was a very odd complication.

Various theories have been advanced to account for these growths. The ordinarily accepted idea of the way the epidermoid is formed is that the skin is infolded along the median line where the two halves of the body come together. It is hard to understand how this should occur in the ovary on one or both sides.

As regards the dermoid cyst and the others of more complex form several theories have been advanced. One is that the different layers of the embryo, from which the ovary is formed, are so close together that it was from inclusion of two of these layers that these complex structures arose. But it is argued against this that the testicle arises from exactly the same layers and is disposed in the same way, hence we should expect dermoids in the testicle as often as in the ovary. Another theory is that they are a fetal inclusion, a case of twins, in which a part of one was included member that the size of these tumors is seldom larger in another. As these often occur on both sides at the than the adult head, although there are exceptions to same time it seems rather improbable that this should

be the explanation. Another is that they are the results of an ovarian pregnancy that has taken place and of which the ovum has been fecundated but has failed to develop except in this abortive way. But they have been found before puberty in undoubted virgins. The theory now generally accepted is that they are to be ranked with the multilocular cystoma of the ovary in their formation, and arise from the follicular epithelium of the ovary which has a germinal property. Moreover, the fact that they are not infrequently associated with the ordinary multilocular cystoma of the ovary gives weight to the view that they are both formed in the same way but by a different process from the layer of germinal epithelium.

Dermoids are said to have more slender pedicles than the larger ovarian cystomata and more prone to inflammation, and that adhesions form about them more frequently than other tumors. There are one or two cases of multiple openings through the vagina, bladder and the abdominal wall all at the same time from one of these dermoids. It rather surprised me to hear Dr. Baker say the contents of these cysts are more liable to set up inflammation of the peritoneum than those of the ordinary multilocular cystoma. It is simply a question of fact. But why one, if perfectly sterile, should do this more than the other, I do not understand. Possibly there is something in the hair or in the sebaceous material, which is not capable of being absorbed, and acts as a direct irritant rather than as a septic one.

Recent Literature.

An Illustrated Encyclopedic Medical Dictionary. Being a Dictionary of the Technical Terms used by Writers on Medicine and the Collateral Sciences, in the Latin, English, French and German Languages. By Frank P. Foster, M.D., etc., with the collaboration of eleven assistants. Vol. IV. With illustrations. New York: D. Appleton & Co. 1894.

This volume completes this fine work, which is a monument to the industry and erudition of its editor whilst it also reflects great credit upon the enterprise and skill of its publishers. The volume gives to the entire work 3,100 folio pages. The careful accuracy and minute detail which characterize these pages make themselves more evident by continued use. What we have said in regard to the previous parts may be repeated and emphasized in regard to this.

Appended are a supplement of sixteen pages, a list of abbreviations, a table of weights and measures, a list of works consulted, and a supplementary list of fifty-six collaborators, being the names of persons, in addition to those given on the title-page, who have taken part in the work, or from whom information has been obtained.

The press-work and illustrations, as far as the latter go, are worthy of the character of this book.

Essentials of Anatomy, including the Anatomy of the Viscera. Arranged in the form of Questions and Answers. By CHARLES B. NANCREDE, M.D. Fifth edition. Philadelphia: W. B. Saunders. 1894.

A new edition of so well known a work calls for no additional comment.

THE BOSTON

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THE PREVENTION OF CONTAGIOUS DISEASE.

In this country, as in England, the difficulty of passing or enforcing any laws or regulations which seem to encroach upon the liberty of the individual has always been the greatest obstacle which health authorities have to overcome in checking the spread of contagion. By the insertion of metaphorical opening wedges, and by taking advantage of different epidemics to drive the wedges deeper, slow but sure advances are made. It is important to note these steps as they occur, in order that the medical profession may aid the authorities as much as possible in making the means effective.

Small-pox was in the past so formidable a plague that it is still possible to enforce more stringent regulations in dealing with it than with those diseases which we have with us always. A similar popular dread makes it practicably possible to attack cholers and leprosy with a strong hand. But diphtheria, scarlet fever, measles and typhoid fever; and, even more, tuberculosis and syphilis are too common to frighten society. Although in the case of the first four notification is enforced, public opinion does not allow the full benefit which could be derived from it. Although a public school is proved to be a kind of bacterial clearing-house, it is not easy to get appropriations for proper inspection.

Slight gains may be noted in the laws of Massachusetts passed by the last legislature, a summary of which was given in the JOURNAL of last week. In Boston the new wards for contagious diseases connected with the City Hospital will materially aid proper isolation.

The congregation of unhealthy persons waiting their turn in a large out-patient clinic has often been noted as a source of danger. That this danger is real has been proved at the Massachusetts General Hospital,

¹ See page 118 of the Journal.

where for the current year all new cases are inspected when they first come in, and three or four cases of contagion a day are held back and isolated.

During the past year the prevention of tuberculosis has been the subject of especial discussion. For several reasons it is a particularly hard disease for boards of health to deal with. A few boards have issued regulations; but more generally they have tried to arouse the medical profession as a whole to take proper precautions. The American Climatological Association, after an excellent paper on the subject by Dr. F. I. Knight, passed resolutions urging the medical profession to take the matter in hand. A short circular issued by the Massachusetts State Board of Health, recommending simple precautions has been endorsed and distributed by the Boston City Board.

A section added to a law concerning contagious diseases passed by the last legislature, that hospitals under certain conditions shall not refuse to treat venereal diseases in out-patient departments, shows that our law-makers are getting over the old Puritan feeling that it was aiding the devil to relieve his subjects of the results of their sins.

Practical results in the prevention of contagion are largely in the hands of the medical profession as a whole; and an enormous source of danger lies in the carelessness, or lack of sense of duty to the public, by individual physicians in individual cases.

GRAHAM BREAD.

A WRITER (Dr. G. Bardet) in the Bulletins et Memoires de la Société de Thérapeutique eulogizes Graham bread as exceeding white bread in nutritive value, and concludes that this kind of bread should be used exclusively by those who from habit or from hygienic motives eat little or no meat, and especially by the constipated. He regards Graham bread as an indispensable part of the vegetarian regimen.

Analyzing the bran which is lost in the manufacture of white bread but which is retained in the fabrication of Graham flour, he affirms that "it contains more nutritive substance than fine flour, and that it is richer in azotized matters, fats and salts. . . . Moreover, it contains (by the germ) a notable proportion of soluble albuminoid matter and a small amount of a laxative oil which gives it a value to the constipated. In fact, it is this oil which makes Graham bread anti-constipating.

In Graham flour properly made, the bran is ground so fine that no coarse particles are visible, all the ingredients of the grain being intimately blended together. Bread made from such flour cannot irritate the intestines by the presence of the bran, and the nutritious properties of the latter are all utilized. It is well known that Bouchardat, who recognized the advantages of Graham bread, discarded it on account of the difficulty of obtaining unbolted flour in which

¹ International Medical Magazine, May.

the bran was ground to a sufficient degree of fineness. This objection, in view of the perfection of the miller's art to-day, can hardly be considered as valid now.

Graham flour, according to M. Bardet, should be made from hard wheat; what has given the best results is the Russian wheat, rich in gluten. In the process of grinding, the bran is first separated from the meal, then ground by two separate sets of stones to an almost impalpable powder, and the two products are then intimately mixed; such flour makes a bread which is quite brown. The kneading should be prolonged and thorough, in fact, more time and pains are necessary than in the fabrication of fine flour bread, and (according to Bardet) less yeast. The well-kneaded dough is left at rest for about fifteen minutes, then subjected to a prolonged baking (an hour and a half for a four-pound loaf, instead of forty-five minutes, the time requisite for white bread.) There is thus obtained a loaf "which is well raised, with a pronounced wheaten odor, of agreeable and sapid taste, of easy digestion, keeping well for several days, and much more palatable when it is stale." Such bread contains forty per cent. of azotized matter, instead of twenty-four to twenty-five per cent., the quantity in fine flour bread. It has also an excess of starch, which makes this kind of bread bad in dyspepsias which are purely stomachal, while on the contrary it is preferable to any other bread in dyspepsias that are intestinal and attended with constipation.

It will be remembered in this connection that Liebig, many years ago, remarked that "many millions more men could be daily fed in Germany if it were only possible to persuade the population of the advantage which bread made of unbolted flour has over that ordinarily eaten."

The conclusions of Dr. Bardet do not differ essentially from those obtained several years ago by Drs. Randolph and Roussel, who published in the New York Medical Journal an exhaustive study of the nutritive value of branny foods. From an economic standpoint the question of the nutritive value of bran is one of great importance, for the removal of this portion of the wheat implies a loss of from seventeen to twenty per cent. in the weight of the grain. The writers, in endeavoring to account for this custom of using the more expensive white bread instead of that which is more nutritious, if not more wholesome, emphasize the difficulty of obtaining a good product from the whole wheat and the greater case with which really good, light and savory bread can be made from the finest flour. Moreover, in the earlier attempts to make unbolted flour bread, the presence of the rough bran scales made this bread relatively innutritions by increasing peristalsis, and so hastening the passage of the entire intestinal contents, that complete digestion and absorption were prevented.

Edward Smith has also closely studied the economic phase of the subject, and reports unfavorably upon the use of branny foods, stating that the diminished absorption of nutritive matters entailed by their use

more than counterbalances the apparent gain in cheapness.1

According to Drs. Randolph and Roussel, the end which popular hygiene attempts to effect by the retention of bran in bread-stuffs can be better attained by other means. Thus, the nutritive salts lost in the bran are readily restored by the ingestion of rich soups and broths; and the various fresh green vegetables used as salads yield in abundance those inorganic food stuffs the presence of which is indispensable to normal tissue activity. A further advantage of these and other succulent vegetables lies in the fact that their cellulose, while efficient in giving proper bulk and consistence to the stools, is, as compared with bran-scales, soft and unirritating to the digestive tract.

Doubtless, as Dr. Bardet has observed, the principal objection against the economical and widespread use of Graham breads will be removed when the more perfect methods of grinding the wheat are substituted for the faulty methods formerly in vogue. The Graham bread of to-day should be macroscopically and microscopically free from all coarse and branuy particles. Such bread cannot be called irritant to the intestines, and should be about as easily digested and assimilated as white bread.

MEDICAL NOTES.

THE CHOLERA. — The cholera at St. Petersburg shows no sign of abating. There are still nearly two hundred new cases daily and over fifty deaths. In the province of Warsaw there have been nearly a thousand new cases the last week, with over three hundred deaths. The increased severity of the epidemic this year will be seen from the fact that last year the largest number of cases reported in St. Petersburg in any one day was sixty-three, on September 6th, and in 1892, 156 on August 16th. In Germany a few scattered cases have been reported, chiefly boatmen on the Spree and Vistula. In Belgium also there have been a few isolated cases. There were two deaths in Amsterdam and one in Dordrecht on August 7th.

VIOLENT INTERFERENCE WITH THE HEALTH OF-FICERS OF MILWAUKEE. — The attempt of the Board of Health of Milwaukee, to remove a child ill with small-pox to the isolation hospital on August 7th, was prevented by the violence of a mob of neighbors which the police did not succeed in dispersing.

SCHOOL-BOARDS AND VACCINATION. — The Supreme Court of Pennsylvania has confirmed the decree of a lower court to the effect that school-boards have the right to exclude from the public schools children who have not been vaccinated.

AN ADDITIONAL HONOR FOR SIR JOHN WILLIAMS.
—Sir John Williams, M.D., F.R.C.P., has been elected
Honorary Fellow of the Obstetrical and Gynecological Society of Berlin.

A DECISION CONCERNING TELEGRAPH MESSAGES OF ILLNESS. — The Court of Civil Appeals of Texas 1 Foods, 1875, p. 175.

has ruled in the case of the Western Union Telegraph Company vs. Porter, decided May 3, 1894, that when the general nature of a communication is plainly described by its terms, and when it relates to sickness or death, if the agent receiving such dispatch desire information about the relationship of the parties concerned he should seek it from the sender, and, if he fail to do so, his principal is charged with the information which inquiries would have developed.

AN OLD MEDICAL PROTEST AGAINST RAILEOAD TRAINS .- According to La Médecine Moderne, there is preserved at Nuremberg in the archives of the first railroad company built in Germany, a protest offered at the time of the construction of the line, by the physicians of Bavaria. Among other reasons given for opposing the scheme is this psychological one: "Travelling in vehicles drawn by a locomotive ought to be forbidden in the interest of public health. The rapid motion cannot fail to produce in the passengers the mental affection known as delirium furiosum. when travellers consent to expose themselves to this danger the government at least is in duty bound to protect the public. A single glance thrown upon a locomotive passing at great speed is sufficient to cause the same cerebral derangement. It is accordingly absolutely necessary to build a fence three metres high on each side of the railway tracks."

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the week ending at noon, August 8, 1894, there were reported to the Board of Health of Boston, the following numbers of cases of acute infectious disease: diphtheria 26, scarlet fever 28, measles 6, typhoid fever 10.

APPROPRIATIONS FOR PUBLIC INSTITUTIONS IN MASSACHUSETTS. — Of the two or three hundred thousand dollars appropriated by the Massachusetts legislature for improvement on public institutions during the present year, over eighty-five thousand dollars are for institutions of a medical character. The Westboro' Hospital for the Insane will receive thirty-three thousand and five hundred dollars, the Northampton Hospital fifty thousand, and the Tauuton Hospital about seven thousand dollars.

A WOMAN APPOINTED TO THE STAFF OF THE MIDDLETOWN, CONN., HOSPITAL. — Dr. Jessie M. Weston has been elected to the medical staff of the Connecticut State Hospital for the Insaue at Middletown, occupying the only medical position which that State has thrown open to women. She was a graduate of the Women's Medical College of Philadelphia.

NEW YORK.

REPORT OF THE STATE BOARD OF HEALTH.—
The bulletin of the State Board of Health for the month of June, just issued, states that while June usually has the lowest mortality of any month in the year, the 9,800 deaths of the present month exceed the number for May by 500, that of June, 1893, a

month of remarkably low death-rate, by 1,000, and of June, 1892, by 700. From zymotic diseases there were 1,790 deaths, or 500 more than in May; this increase being due to the mortality from diarrheal disease and principally confined to the cities of New York and Brooklyn. The deaths from all other zymotic diseases were less than in May. Diphtheria shows the least change, the mortality from it having continued about the same for the past six months, and not less than 200 deaths occurring above the average for June, in which month the mortality usually diminishes. Of the 575 deaths reported, all but 100 occurred in the maritime district of the State. The increase in the number of deaths from diarrheal disease is no doubt to be attributed to the unusually hot weather of June, the average temperature for the month being two degrees above the normal.

CASES OF TRICHINOSIS. — On July 28th, a German, his wife and two small children were admitted to the Fordham Hospital in a critical condition, suffering from trichinosis, the result of eating pork bologna sausage. The disease had already lasted for some weeks, as its real character was not at first recognized by the physician who attended the family; but up to the latest report none of the cases had terminated fatally.

THE NEW HOSPITAL FOR THE INSANE AT WHITE PLAINS. - During the months of August and September, the patients of the department for the insane of the New York Hospital are to be gradually transferred from the old buildings at Bloomingdale to the new quarters of the institution now approaching completion at White Plains. These are intended to be model structures in every way, and no expense has been spared in their construction. When the work is finished there will be thirteen distinct buildings, connected by means of well-lighted corridors, and from all sides of the different sections the out-door view can be seen. The central administration building has not yet been put up, but the chapel building, which is now finished, will be temporarily used for the purposes of the latter. On its second floor there is a large assembly-room for Sunday services and the weekly entertainments given to the patients. The various pavilions will accommodate four hundred patients, although the average number up to the present time has been about three hundred. The group of buildings presents a very handsome appearance, and stands in the midst of beautiful grounds which have been laid out by the wellknown landscape architect, Frederick Law Olmstead. They are constructed of brick, combined in light and dark shades, - with a gray stone basement, and the general style is that of the Spanish Renaissance.

MORTALITY. — During the week ending July 28th, for the first time in many months, no death from small-pox occurred in the city, although three cases of the disease were reported. The number of deaths from the other contagious diseases also was unusually small: — 38 from diphtheria, 4 from scarlet fever, and

5 from measles. The total deaths reported were 966. against 1.106 during the previous week. This represents an annual death-rate of 26.11 per thousand of the estimated population, and is 126 less than the average of the corresponding weeks for the past five years. The greatest mortality was naturally due to diarrheal diseases, the number of deaths from this cause being 256; but this was 38 less than in the preceding week, and 43 less than the average of the corresponding weeks of the past five years. There was also a marked falling off in the deaths from phthisis, the number of which was 77, against 104 during the previous week. On the other hand, the deaths from typhoid fever increased from 4 to 12, and those from sunstroke from 7 to 14. The number of births reported was 1,145, an excess of 179 over the deaths.

Miscellanp.

MEDICAL ETIQUETTE AMONG THE ANCIENTS.

In an old Latin poem, the manuscript of which has been found in the National Library at Paris, occur some interesting pages in which the author, whose name is unknown, explains the proper conduct of a

physician.1

"On approaching the patient you should assume a calm expression and avoid any gesture of greed or vanity; greet those who salute you with an humble voice and sit down when they do. Then, turning to the sick person, ask him how he is, and examine his pulse and his urine. To the patient you promise cure, but immediately on leaving the room you say to the relatives that the disease is grave. The result will be that, if you cure him, your merit is greater and you will receive the greater praise and fee; while, if he dies, they will say that you had no hope from the first."

This counsel has been well followed by some physicians to the present day. The directions for table

manners are equally amusing:

"When those who preside over the house ask you to the table, conduct yourself in a seemly manner. Each time that a new dish is brought on, do not fail to ask for the condition of the patient. This will give him great confidence in you, as he sees that in the midst of the variety of the repast you do not forget him. On leaving the table, return to the patient, and tell him that you have dined most excellently, and that everything was served to perfection. The sick person who was anxious about these points will rejoice at your words."

THE VICTIMS OF CANCER HOUSES.

MR. SHATTOCK, in his recent Morton Lecture, having again called attention to the fact that cancer like tubercle may repeatedly show itself in certain houses, as an argument in favor of a definite parasitic etiology, several communications have been made to the British Medical Journal of such interesting cases; so that it would appear to be a more common occurrence than has been supposed. A single example in a physician's practice might easily be considered coincidence unless

¹ La Médecine Moderne, No. 55, 1894.

confirmed by other cases. The collected evidence of many such authenticated cases, where family relationship and heredity can be ruled out, would be of great service in establishing data for further proof. Among the more striking of the cases reported are the following:

Mr. D'Arcy Power, of St. Bartholomew's Hospital, reports this instance: 1 "Miss B., aged forty-five, lived in a certain house in a suburb of London for thirteen years, and died of cancer of the stomach in 1884. Miss T., aged forty-seven, then succeeded to her place and bedroom. She had lived in the house for twenty years, and died of cancer of the liver in 1885. Mrs. J., aged sixty-seven, who had lived in the house then for eight years, succeeded to the place, and took the bedroom successively occupied by Miss B. and Miss T. Mrs. J. died of cancer of the breast and uterus in 1893. Each of these patients appeared to be in perfect health until they took one another's place as housekeeper in the building in which they had lived so long.

Mr. Shattock has previously reported a series of four cases of cancer, three fatal, occurring within fourteen years, in persons unrelated by blood, who were

living in a single house.

Mr. Blyth's cases were even more striking: "Three successive tenants of a house died of cancer. Mrs. V. frequently visited the last of these tenants, to whom she was not related, and subsequently died of cancer of the breast and lung. Her niece, a girl of fourteen, slept with her and nursed her. She, too, developed a mammary cancer, which was operated upon with success."

The following case was reported in 1892 by Drs. Fabre and Molliere: "In 1873 the owner of a wellbuilt house in Lyons, occupied by well-to-do tenants, died of cancer of the stomach at the age of eighty. He had always lived on the first floor. Four years later a tailor, aged forty-five, who lived in the entresol, died of cancer of the stomach. Three years later the porter, who had always been strong and well, died, at the age of fifty five, of gastric cancer. Two years later a man of thirty-five, living on the second floor, died of cancer of the cervical glands.

The latest series reported is equally interesting. Dr. Scott, of Glasgow, attended three cases having this history: "J. K., aged fifty, employed as a night watchman, and occupying a house of two rooms, died of cancer of the liver. J. L., fifty-four, succeeded to house and work, and died within two years of cancer of the bladder. A. L., sixty, under similar promotion, died of caucer of the stomach in eighteen months. All were previously healthy, unrelated, and without any hereditary transmission.

Even more curious is Dr. Chapman's series of three successive unrelated occupants of a house who became affected with cancer of the rectum.

ODONTALGIA IN THE ARMY OF THE ARGEN-TINE REPUBLIC.1

MARIO CAPDEVILA publishes, in the Boletin Mensual de la Sociedad de Sanidad Militar, the following curious details concerning the occurrence of odontalgia in the army of the Argentine Republic:

In 1893, there were treated 712 cases among the

British Medical Journal, June 9, 1894.
 British Medical Journal, June 16, 1894.
 Sanitarian, July, 1894.

different military grades, as follows: General, 1; colonels, 3; lieutenant colonels, 5; majors, 12; captains, 18; first lieutenants, 21; second lieutenants, 15; ensigns, 11; soldiers of all ranks, 626; total 712.

Classification by service: Of infantry, 248; cavalry, 84; artillery, 87; invalids, 9: national guards, 24; sanitary corps, 46; military hospital, central, 207; others, 42; in the navy, 8; prefecturas maritimas, 7.

Classification by diagnosis: Alveolar abscess, 15; abscess of maxillary sinus, 6; caries, first grade, 63; id. second grade, 21; id. third grade, 47; id. fourth grade, 116; salivary concretions, 8; denuding of the teeth, 4; exostasis, 12; erythematous stomatitis, 14; erythematous ulcero-membranosa, 6; epulis, 12; various erosions, 24; gingivo-cutaneous fistula, 12; mercurial gingivitis, 8; glossitis, 2; hypertrophy of the gums, 7; luxations of the teeth, 1; necrosis of the teeth, 27; necrosis of the superior maxillary bone, 15; id. of the inferior, 11; toothache, 32; acute periostitis. 38; chronic periostitis, 45; polipi of gums, 20; id. of the flesh, 19.

THE PHYSIOLOGY OF THE SPLEEN.

VULPIUS has arrived at the following general conclusions concerning the physiology of the spleen:

(1) Histological study of the normal splenic tissue shows the possibility but not the certainty of the entrance of colorless cells in the circulation from the spleen. It is evident that the red cells undergo disintegration in the spleen, but there is no ground for assuming that they are formed in the spleen.

(2) Comparison of the blood of the splenic artery

and vein shows no positive difference.

(3) In acute general anemia the spleen shows signs of increased activity.

- (4) Removal of the spleen causes a transient decrease in the number of red, and increase in the number of white, blood-cells.
- (5) The thyroid gland has no vicarious relation to the spleen.
- (6) The lymph-nodules and the bone-marrow acquire an increased blood-forming activity after extirpation of

(7) The regeneration of blood is retarded after

hemorrhage in persons without spleens.

These conclusions, though contradicting certain accepted teachings, offer little that is new, but are of value in that they are based upon accurate scientific data, and corroborate much that has already been done. Unfortunately, our knowledge of the physiology of the spleen is still left in a state of confusion.

TYPHOID STATISTICS.

In the report on typhoid fever recently presented to the Medical Society of the District of Columbia by a committee consisting of Drs. G. L. Magender, W. W. Johnston and C. M. Hammett, the following statistics were given 1 of the number of deaths from typhoid fever to each ten thousand inhabitants in sewered and unsewered cities, on an average, during five years, 1880-1884.

"In cities with good sewers and general water-

Annals of Surgery, August, 1894.
 Beitrage zur kiin. Chirurgie, Bd. xi, 1894.
 Journal of American Medical Association, July 28, 1894.

supply the averages were as follows: Munich, 1.7; Dantzig. 1.5; Frankfort, 1.4; Breslau, 3.3; Hamburg, 2.6; Berlin, 2.9; Brussels, 3.3; London, 2.3; twenty-eight English cities, 3 2; New York, 3; Brooklyn, 1.5; Vienna, 2.1; Washington, 4.6; Washington (1885-90), 6.7. In cities without sewers or very imperfectly sewered, the yearly averages for each 10,000 residents were as follows: Paris, 9.9; Marseilles, 12.8; Turin, 9.5; Naples (1881-84), 7.1; Palermo (1881-84), 13.1; Catania, 19; 281 cities in Italy (1881-82), 9.5; St. Petersburg (1883-84), 9.9; Riga (1881-82), 15.8; Buda-Pesth (1877-81), 9.2; twenty German cities (1878-82), 9.8; New Orleans (watersupply from cisterns above ground), 2.7; Baltimore (abundant water-supply), 4.8; Cincinnati, 7.3.

STARTING-POINTS OF TUBERCULOUS DIS-EASE IN CHILDREN.

AT a recent meeting of the Medical Society of London, Dr. J. Walter Carr read a paper based on 120 necropsies upon children suffering from tuberculous disease, in which he drew the following conclusions: 1

"(1) Tuberculous disease commences usually in the glands, the liability being at its maximum during infancy and early childhood, and rapidly decreasing in later childhood. But, of the 120 cases, the disease had almost certainly commenced in the glands in 70, or 58.3 per cent. (including 13 in which glands only were involved), and in 17 more, or 14.2 per cent., there was considerable probability at least that the glands were the primary focus. Including doubtful cases, the glands formed the primary focus in 64.5 per cent. of those under five, and in only 37 per cent. of those above that age.

"(2) Tuberculous lesions in the cervical glands, as in the joints, may arise by infection through the blood-stream, but caseation of the bronchial and mesenteric glands, when primary, is usually, if not always, due to direct infection from the organ with which they are connected, it having been shown that bacilli may pass through the lungs or the intestinal walls without producing any recognizable lesion, and that they then enter the lymphatic channels, and not

the blood-vessels. "(3) Tuberculous disease starts much more frequently in the thorax than in the abdomen, and certainly far more often in the thoracic than in the mesenteric glands. Of the 120 cases, in 79 the disease probably started in the thorax (in 54 certainly and in 12 possibly in the bronchial glands); in 20 in the abdomen (in 12 certainly and in 2 possibly in the mesenteric glands); and in 6 in either one or the other cavity. In only 2 cases were the cervical glands the probable primary focus. The conclusion is that, though infection undoubtedly does occur through the intestines, and especially (as experiments on animals have shown) through milk, yet infection through air is by far the more frequent and important. The disease is so commonly generalized in children that figures merely giving the frequency with which different parts are affected are of little value, the important point being to ascertain where the disease is most advanced,—that is, where it probably commenced.

"(4) Caseation of internal glands, from the fre-¹ British Medical Journal, May 12, 1894.

quency with which it is found after death, must often exist alone and quite unsuspected, being doubtless in many cases quite impossible of diagnosis, and it is very necessary to realize its frequency and importance when dealing with obscure febrile conditions in chil-

"(5) In regard to treatment, prophylaxis is by far the most important; and as it is probably impossible to prevent bacilli from obtaining access, we must try to increase the resistive powers of the system to their entry, above all by keeping the mucous membranes healthy, by dealing prompily with, and if possible preventing, rickets,—the great cause of catarrh in early childhood, - and by taking especial care of children during convalescence from acute specific fevers, which so depress the vitality of the body generally, and the resistant power of the mucous membranes, as well as the filtering power of the glands in particular."

THERAPEUTIC NOTE.

CORK SPLINTS FOR DEFLECTIONS OF THE NASAL SEPTUM. - Dr. T. Passmore Berens 1 reports excellent results from the use of a simple device for a splint in cases of fracture or operation for deflected septum nasi. The plugs of cotton or oakum become too readily foul, while the various supports which have been used have many disadvantages, the soft rubber tubing being too yielding, while the hard-rubber or ivory plugs cause too much pressure and pain. Dr. Berens' device to overcome these and other difficulties is as ingenious as it is simple. He makes his splints from corks in the following manner: "A selected cork (pint-bottle size), in average length one and one-quarter inches, in breadth at its broad end three-quarters of an inch, at its narrow end one-eighth to one-quarter of an inch less, in thickness from one-quarter to threeeighths of an inch, is whittled to the shape of an almond with the point cut off, and flattened on the side that is to lie against the septum; the opposite side near its lower border is slightly grooved for the reception of the inferior turbinate body. A nasal burr or trephine is now used to hollow the splint, leaving the shell one-sixteenth to one-eighth of an inch thick. A rat-tail file, small-bladed knife or red-hot metal may also be used for this purpose. Sand-paper is used to smooth both the inner and outer surfaces, and the whole splint is then coated with flexible collodion, to which has been added iodoform in the proportion of thirty grains to the fluid ounce, allowed to dry, and it is ready for use. The making of splints requires no especial mechanical skill, and they can be modified with ease to suit the peculiarities of each case." The special advantages of these splints, which are possessed by no other similar device, are the quickness and ease with which they can be made and shaped to fit the peculiarities of each case; their cheapness, lightness and elasticity, combined with sufficient firmness to support the septum: their durability and non-conduction of heat and cold, and non-interference with the free circulation of the blood; the ease with which they can be cleaned in situ by washing out with peroxide ofhydrogen and boric-acid solutions followed by an oily spray as benzoinol; and the length of time they can be worn without pain, discomfort or severe ulceration.

¹ Manhattan Eye and Ear Hospital Reports, No. 1, 1894.

METEOROLOGICAL RECORD,

For the week ending July 28th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

	Baro- meter		ete:		Re hur			Dire of w		Velocity of wind.				Velocity We'th'r.		nches.
Date.	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 ₺. Ж.	8.00 P. M.	Daily mean.	8.00 ▲. Ж.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8,00 A. M.	8.00 P. M.	Rainfall in in		
822	30.04	64	69	58	90	77	83	N.E.	N.E.	11	4 9	o.	Q.	.40		
M23 T24	30.12 29.96	64 70	70 79	59 61	70 97	82 82		N.E. E.	E. N.W.	20	5	C. R.	F. C.	1.12		
W .25	30.06	78	88	68	59	86			s.	12	8	Ĉ.	R.	.45		
T26	30.20	76		69	71	78	74	N.Ė.	E.	8	5	č.	Ċ.	.06		
F27	30.22	71	83	66	72	86		S.E.	S.W.	6	12	č.	ŏ.			
828	30.00	84	97	70	73			W.	S.W.	13	10	Č.	F.			
				1	_		_									
			1	1									!			

*O., cloudy; C., clear: F., fair: G., fog: H., hazy; S., smoky: R., rain: T., threatening; N., snow. † Indicates trace of rainfall. 43" Mean for week.

RECORD OF MORTALITY
FOR THE WEEK ENDING SATURDAY, JULY 28, 1894.

	nd	the	_ 5	Percentage of deaths from						
Cities.	Estimated popu- lation.	Reported deaths in each.	Deaths under five years.	Infectious diseases.	Consump- tion.	Diarrhonal diseases.	Whooping-	Diphtheria and croup.		
New York	1,956,000	982	540	33.10	7.70	25.50	.70	4.40		
Chicago	1,438,000	_	} -	_	_	· . —	_	. —		
Philadelphia .	1,139.457	504	232	26.20	9.60	20.40	.80	2.€0		
Brooklyn	1,013,000	536	271	30.02	10.26	22.04	.96	5.31		
St. Louis	540,800	010				03.64				
Boston	501,107	313	175	37.76	8.61	32.64	.61	4.16		
Baltimore	500,000	111	56	31.50	9.90	15.30	5.40	5.40		
Washington .	285,000	LAI	50	31.00	9.90	10.50	0.40	5.40		
Cincinnati Cleveland	325,000 325,000	189		44.05	1.65	37.63	3.18	.53		
Distahuma	272,000	126	68	34.40	6.40	28.00	8.20	.03		
1611	265,000		-	01.10	0.20		0.20			
Nashville	87,754	14	_	57.12	7.14	35.70	7.14	_		
Charleston	65,165	_	_			_		_		
Portland	40,000	_	_	_	_	_	_	_		
Worcester	100,410	36	14	20.24	10.12	16.68	_	2.78		
Fall River	92,233	71	45	49.35	11.28	47.94	-			
Lowell	90,613	52	37	61.44	3.84	55.68	1.92	_		
Cambridge	79,607	40	26	25.00	10.00	17.50	2.50	=		
Lynn	65,123	26	14	3.46	3.46	_	3,46	_		
Springfield	50,284	18	11	55.50	11.10	14.44	_	_		
Lawrence	49,900	_	_		-	-	_	_		
New Bedford .	47,741	20	15	60.00	5.00	55.00	-	_		
Holyoke	43,848	_	-			-	-	20.00		
Brockton	33,939	5	2	40.00	20.00	20.00	-	20.00		
Salem	33,155	20	18	45.00	5.00	10.00	_	_		
Haverhill	32,925	9	8	11.11	11.11	11.11	-	=		
Malden	30,209	8	4	75.00		62.50	_	12.50		
Chelses	29,806	12	8	16.66	8.33	8.83	_	_		
Fitchburg	29,313	14	7	42.63 28.56	14.21	28.56	_	_		
Newton	28,837	1.7	l <u>.</u>	46.06	7.14	28.00	_	_		
Gloucester	27,293	21	14	33.32	4.76	23.80	_	9.52		
Taunton	26,955 22,058	4	13	00.0Z	25.00	20.00	_	9.02		
Waltham	19,642	-			20.00	_	_	_		
Quincy Pittsfield	18,802	4	2	50.00	_	25.00				
Everett	16.585	5	3	40.00	20.00	20.00	_	=		
Northampton .	16,331	4	2	50.00	20.00	25.00	_	=		
Newburyport.	14,073				_	20.00	_	Ξ		
Amesbury	10,920	3	1	33.33				-		

Deaths reported 3,254: under five years of age 1,616; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fever) 1,105, diarrheal diseases 859, consumption 259, acute lung diseases 158, diphtheria and croup 112, whooping-cough 41, typhoid fever 36, scarlet fever 16, cerebro-spinal meningitis 11, measles 10, erysipelas 5. malarial fever 4.

36, scarlet fever 16, cerebro-spinal meningitis 11, measles 10, erysipelas 5, malarial fever 4.

From typhoid fever New York 12, Philadelphia 9, Washington 4, Cleveland 3, Pittsburg 2, Charleston, Fall River, Lowell, New Bedford, Northampton and Amesbury 1 each. From scarlet fever New York 4, Philadelphia, Brooklyn, Cleveland and Cambridge 2 each, Boston, Worcester, Lowell and Chelsea 1 each. From cerebro-spinal meningitis New York 3, Washington 2, Boston, Cleveland, Somerville, Springfeld, Pittsfield and Everett 1 each. From measles New York 5, Brooklyn 2, Philadelphia, Pittsburg and Springfield 1 each. From erysipelas New York, Cleveland, Pittsburg, Nashville and Lowell 1 each. From amall-pox Brooklyn 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending July 21st, the death-rate was 16.6. Deaths reported: acute diseases of the respiratory organs (London) 124, diarrhea 241, measles 136, whooping-cough 82, diphtheria 57, scarlet fever 46, fever 26, small-pox (London, Oldham and Bradford 1 each) 3. The death-rate ranged from 9.8 in Cardiff to 23.5 in Liverpool;

The death-rate ranged from 9.8 in Cardiff to 23.5 in Liverpool; Birmingham 16.1, Bradford 12.3, Bristol 12.0, Gateshead 11.7, Hull 11.0, Leeds 17.4, Leicester 13.5, London 16.8, Manchester 18.6, Nottingham 15.9, Plymouth 16.0, Portsmouth 13.4, Salford 22.0, Sheffield 18.6, West Ham 17.1.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMEN'1, U. S. ARMY, FROM JULY 28, 1894, TO AUGUST 3, 1894.

Leave of absence for one month, to take effect about August 6th, with permission to apply for an extension of one month, is granted FIRST-LIEUT. R. S. WOODSON, assistant surgeon.

Leave of absence for one month, to take effect about October 1, 1894, with permission to apply for an extension of one month, is granted FIRST-LIEUT. F. A. WINTER, assistant surgeon.

FIRST-LIEUT. A. N. STARK, assistant surgeon, now at Fort Sam Houston, will proceed to Camp Eagle Pass, Texas, and report for temporary duty.

Leave of absence for one month and twenty days, to take effect on or about August 15, 1894, with permission to leave the United States, is granted LIEUT.-Col. ALFRED A. WOODHULL, deputy surgeon-general.

By direction of the Secretary of War, the order assigning CAPTAIN GROEGE McCREERY, assistant surgeon, to duty at Fort Washakie, Wyoming, is revoked.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U.S. NAVY FOR THE WEEK ENDING AUGUST 4, 1894.

J. A. HAWKE, surgeon, detached from "Independence" and to the "Charleston."

J. B. PARKER, surgeon, detached from "Charleston" and to the "Idependence."

A. M. D. McCormick, passed assistant surgeon, from "Charleston" and to the "Monterey."

R. G. BRODERICK, assistant surgeon, from Mare Island Hospital and to the "Charleston."

J. S. HOPE, assistant surgeon, from "Charleston" and to Mare Island Hospital.

W. F. Arnold, passed assistant surgeon, from the "Monterey" and to the "Charleston."

RECENT DEATH.

JUDSON B. ANDREWS, M.D., Superintendent of the State Hospital for the Insane at Buffalo, N. Y., died August 3d, aged sixty years.

BOOKS AND PAMPHLETS RECEIVED.

"The Martindale Herbarium." Reprint. 1894.

Appendicitis Obliterans. By N. Senn, M.D., Ph.D., LL.D., Chicago. Reprint. 1894.

Seventy-fourth Annual Announcement of the Philadelphia College of Pharmacy. 1894.

One Hundred Years of Business Life, 1794-1894. New York: W. H. Schieffelin & Co. 1894.

The Phonographic Record of Clinical Teaching, No 1. London: Sir Isaac Pitman & Sons. June, 1894.

Annual Announcement and Catalogue, Sessions 1894-95, Baltimore University, School of Medicine, Baltimore, Md.

Fifty-fourth Annual Announcement of the Missouri Medical College, Session 1894–95, and Catalogue of Session 1893-94.

On Guaiacol Applied Externally as an Antipyretic. By Julius Friedenwald, A.B., M.D., and H. H. Hayden, M.D. Reprint. 1894.

Report for the Year 1893-94. Presented by the Board of Managers of the Observatory of Yale University to the President and Fellows.

Association of the Alumni of the Albany Medical College, Medical Department, Union University, Proceedings of the Twenty-first Annual Meeting held April 18, 1894.

Amputation of the Entire Upper Extremity (including the Scapula and Clavicle), and of the Arm at the Shoulder-joint; with Especial Reference to Methods of Controlling Hemorrhage, with a Report of One Case of the Former Amputation and Four of the Latter. By W. W. Keen, M.D. Reprint. 1894.

Griginal Articles.

THE FREQUENCY OF PUERPERAL SEPSIS IN MASSACHUSETTS: ITS DIAGNOSIS AND EFFICIENT TREATMENT.¹

BY EDWARD REYNOLDS, M.D., OF BOSTON.

At the time when I promised to prepare a paper for this meeting, I had been much interested by statistical reports of the frequency of puerperal sepsis in England and in New York state; and as such cases are always sufficiently common in my consultation practice to convince me that deaths from this cause are only too frequent here, I had thought that a report upon its frequency in Massachusetts would be of interest; but on consulting the only sources from which such statistical information can be obtained, that is, the reports of the City and State Boards of Health, I found this cause of death reported with so surprising an infrequency that I was obliged to conclude that the profession had not put it in the power of these boards to make an accurate and reliable statement on this point. I found, for example, that if I were to believe in the accuracy of the reports, I should be forced to conclude that I, personally, had seen in consultation during the year 1893 almost onefourth of all the fatal cases of this disease in this city of half a million inhabitants. Such an hypothesis is manifestly absurd, and I am regretfully forced to abandon any attempt at estimating the frequency of septic disease among us and to confine myself in this paper to the question of its diagnosis and treatment.

I am the more ready to limit myself thus on account of the importance of these points, and because the experience which I have gained from consultation practice convinces me that a great many of the profession fail to recognize the all-important therapeutic distinction which exists between sepsis in its early or localized stage, and sepsis which has been allowed to reach the point of constitutional infection. In illustration of this point I wish to quote the results of thirteen cases of puerperal septic disease which I have seen in consultation since January 1, 1893, as compared with the fifteen cases which occurred under my charge in the Out-Patient Department of the Boston Lying-In Hospital during the year 1893.

In five of the thirteen consultation cases I was called while the disease was still localized in the uterus, and under prompt treatment all five made prompt recoveries. In two the disease was advanced, but had localized itself in the pelvis as pelvic abscess; under surgical treatment one made a fairly prompt, and the other a very slow recovery. In six cases constitutional infection was marked, without localization of the disease in the pelvis; of these, one recovered after an exhausting illness and the other five died, a mortality of $38\frac{1}{2}$ per cent. of the whole number, and of $83\frac{1}{2}$ per cent. of the late cases.

The contrast between this record and that of the hospital is very marked. During the year 1893 there were fifteen cases of sepsis among the 1,352 outpatients of the hospital.2 Of these fifteen cases, one

1 Read before the Massachusetts Medical Society, June 13, 1894, and recommended for publication by the Society.

2 Under the methods of the present day septic disease has become extremely rare in the wards of the institution. Even in the Out-Patient Department, in which the worst fed, worst lodged, and most filthy of the community are attended under the immediate care of a constant succession of inexperienced men, a careful supervision of their work has reduced the number of cases of sepsis to fifteen in

refused treatment, was under the care of some physician, to me unknown, for the succeeding five or six days, and was then sent into the City Hospital in a state of such advanced constitutional infection that she died in spite of the most energetic treatment. Of the fourteen consecutive cases who submitted to treatment recommended, not one died.

The practitioner is too apt to be unwilling to diagnose sepsis in his own cases; he is too prone to shut his eyes to the possibility of infection, to adopt every other explanation of the condition of the patient, and admit the existence of sepsis only after it has reached the incurable stage. Those who are in the habit of believing that the slight disturbances of health and temperature, which either constitute mild sepsis or herald the approach of grave sepsis, are due to milk fever, nervousness, excitement and other indefinite ailments, do not recognize the fact that under strict asepsis the convalescence from labor is always perfectly smooth and unattended by any elevation of temperature, unless some definite entity of intercurrent disease is present; that the mild disturbances which are frequently seen must therefore be considered mild sepsis, and that it is seldom possible to say in advance that they are not the initial stages of a severe attack. Every rise of temperature or disturbance of the health during the puerperium is not, of course, due to sepsis, but every such disturbance should be considered sepsis until some other cause can be established to account for it.

After labor, the first, or first and second temperature may be high as the result of fatigue, but the subsequent temperatures should be between ninetyeight and ninety-nine, and when any rise above the latter figure occurs its cause should always be investigated. It may be due to disturbances in the breasts, constipation, intercurrent non-obstetric diseases, or sepsis, and when any such slight disturbance of the health of the puerpera arises the differential diagnosis between these conditions should always be carefully

Slight disturbances in the breast may account for considerable elevations of the temperature, but the condition of the breast should not be permitted to account for the disturbance unless the intrinsic symptoms of sepsis are absent, nor if relief of the mammary disturbance is not followed by a prompt subsidence of the temperature.

Constipation should not be allowed to occur, but if the bowels have been inactive before the appearance of the rise of temperature, they should be promptly and thoroughly opened, when any elevation due to this cause will at once disappear, and any disturbance which remains must be accounted for in some other wav.

Intercurrent non-obstetric diseases must be excluded by a careful physical examination of the patient as a whole. Among the most common are malaria, pneumonia, tonsillitis, and exacerbations of pre-existent, latent, inflammatory troubles in the pelvis. Malaria can only be established by a careful exclusion of sepsis; or by the existence of repeated chills which recur at regular intervals, are out of proportion to the con-

establish the diagnosis of malaria in the puerperal state as would be required at any other time. Malaria is a convenient excuse and it is too common to see a diagnosis of malaria admitted pro forma and without any careful consideration of the condition of the patient. Pneumonia should be diagnosed only by the presence of the well-known signs of physical examination of the chest, and not by the presence of cough and hurried breathing, which are not infrequently mere reflexes from the pelvis. I have twice been called in consultation to see cases in which the puerperium was said to be complicated by pneumonia, but in which the real condition was an acute purulent salpingitis, and in which all pneumonic symptoms disappeared after the tubes had been emptied of pus. Tonsillitis is to be excluded or established by examination of the throat; local pelvic inflammation by the ordinary bi-manual examination of the pelvis, and the other less frequent non-obstetric diseases by the absence of their characteristic symptomatology.

It should never be forgotten that even if one of these diseases is actually present it may still be complicated by sepsis; that none of them are competent to produce the symptomatology of sepsis; and, finally, that when the temperature of the puerpera is disturbed, in the absence of definite ground for a diagnosis of some other disease, the probabilities are in favor of the existence of sepsis.

The early diagnosis of sepsis rests mainly on the physical signs which can be gained by examination of the patient. The symptomatology of obstetric sepsis is commonly described as consisting of an elevation of temperature, a decrease in the lochia and milk, some decrease in the other secretions of the body, foulness of the lochia and abdominal distention and tenderness, which latter is most marked over the fundus of the uterus; but this description is of little value to-day. He who fails to diagnose sepsis, when such a symptomatology is presented him, is ignorant of the rudiments of his art; while he who must wait till this symptomatology is present, is unable to diagnose sepsis at a time when his diagnosis is of any great value to his patient; for this group of symptoms is the symptomatology of constitutional infection, and when this is present the disease has passed beyond its early and curable stage, the physician has failed in his duty, and the patient is in an extremely dangerous, if not hopeless state.

To take up these symptoms in detail. The decrease of the milk and other secretions only comes on after constitutional infection has existed for some days, and this symptom is therefore seldom or never present in the curable stage of the disease. Decrease in the quantity of the lochia is apt to come on late, and should not be waited for. Foulness of the lochia is usually present at a tolerably early stage, but is not a reliable guide, since it sometimes does not occur until during the latest stages, and on the other hand may be extremely marked as a result of external decomposition of the lochia, when there is little or no true sepsis present.

The odor of sepsis is, in fact, dependent on the presence in the lochia of the comparatively harmless bacteria of decomposition, and is not produced by pure infections of the more dangerous pathogenic forms. I have repeatedly seen cases of serious septic disease in which the uterine secretions yielded pure cultures of streptococci, staphylococci, or the Klebs-

Löffler bacillus of diphtheria, in spite of an entire absence of odor in the lochia.

There is little left, then, of diagnostic value which can be obtained during the promptly curable stage, except uterine tenderness, the other characteristics of the uterus shortly to be spoken of, and the course of the temperature. These symptoms must then be carefully considered. Much may be gained by a careful study of the temperature, which should, therefore, always be plotted on paper, during every convalescence from labor. Septic infection may originate during labor, or at any period during the first eight days thereafter, but its pyrexia appears most commonly on the third, fourth or fifth day. When the temperature rises suddenly from the normal point to above 101°, with or without a chill, and is accompanied by but little uterine tenderness, the pyrexia is usually not symptomatic of sepsis; but when such a rise is due to septicemia, the case is always one of extreme virulence, and is likely to be promptly fatal. Such infections can only occur from the introduction into the system of a large quantity of pathogenic bacteria, and are to-day infrequent. Any case which presents such a rise should be visited with great frequency till the observer is either able to establish the presence of some other disease as a cause for the pyrexia, or till either a rapid increase in uterine tenderness, or the appearance of a foul odor enables him to diagnose the presence of this very dangerous form of septicemia, which has been well named by Garrigues septicemia acutissima.

When this fortunately rare form of septicemia is present there is but little hope for the patient, and that little consists in the adoption of the most radical measures of treatment at the earliest possible moment. The onset of the more ordinary forms of sepsis is, on the other hand, usually accompanied by a gradual and insidious elevation of temperature. It is, then, these gradual and not excessive rises of temperature which are most suspicious of sepsis, and when such a pyrexia is attended by a recurrence of uterine tenderness or by an undue prolongation of that which is so often seen immediately after labor (or by any foulness of the lochia), it is sufficient reason, in the absence of other symptomatology, for a physical examination of the genital tract. This is, if aseptically performed, a harmless procedure, and, if the reason for it is boldly explained to the patient, will

never be objected to by her.

The vagina should be exposed and its surface searched for the so-called pseudo-diphtheritic gray patches, and this is best done by a Sims speculum, the only one which thoroughly exposes the vaginal walls. The surface of the cervix and such portion of the cervical canal as is visible should at the same time be especially carefully searched. If no such patches are found, the cervix should be seized with a pair of double hooks and a small swab of sterilized cotton should be passed into the interior of the uterus, and withdrawn covered with uterine lochia. The odor of this should be carefully noted, since the uterine lochia may be foul while the vaginal secretions are still uninfected. If no odor is discovered, the sterilized cotton may be put into a sterilized test-tube and reserved for a bacteriological examination, if the conveniences for this are at hand. The patient should ness of the uterus should now be noted, since subinvolution, undue softness and tenderness of the fundus and an undue patency of the os, are charactistic of the infected uterus. Finally, the region of the broad ligaments should be carefully palpated in the search for acute inflammatory conditions in their substance.

If gray patches are found in the vagina or on the cervix, but the uterus is of sufficiently firm consistency and small size to correspond to the period of the convalescence at which the examination is made, the gray patches should be thoroughly powdered with iodoform, and the physician should wait until the following day before invading the uterus. If, then, the patient is improving, the treatment should be repeated daily till the gray patches disappear. If, in the presence of an infected vagina or cervix, the uterus is soft, flabby and over-large, with a widely open os and markedly tender, it is generally safe to infer that its cavity is already infected, and the treatment must be directed primarily to it.

When infection of the uterus has been diagnosed, it may be treated by intra-uterine douches of an antiseptic solution, by placing iodoform bougies in the uterine cavity, or by these in combination with the use of the curette. The first two remedies have long been popular, but even the repeated use of intra-uterine douches is often ineffective, and they are never free from danger. Indeed, he who has ouce adopted the use of the curette and has learned by experience the amount of foul débris which can be removed from the infected uterine cavity, will, of necessity, soon give up the idea that the mere washing of its surface with corrosive sublimate can be a measure of any considerable value.

The use of the curette is attended by two dangers. First, an incomplete removal of the débris leaves a fresh wound in direct contact with septic material; but it has been shown by experience that this danger can be avoided by thoroughness in the use of a good technique. Second, the walls of the puerperal uterus are of soft consistency, and might undoubtedly be perforated by a sharp curette in the hands of a careless operater. The uterine muscle is, however, so much more firm than the infected decidua which covers it, that the difference is instantly appreciated by the touch; and while the operation is not one which should be recommended to those who are entirely unskilled in instrumentation, it is one which is within the capacity of any one who is possessed of even an average degree of surgical tact—as is shown, I think, by the facts that I have, for years, taught this operation to all my house-officers at the Lying-in Hospital; that, in the majority of our cases, the curettage of the uterus has been done by them, under my supervision; and that no one of them has ever had an accident.

The curette used should have a large blade, in order to make it easy to cover the whole interior surface of the large puerperal uterus, and in order to distribute its pressure over a large surface; it must have a long shank in order to reach the fundus, and the shank should be flexible, in order to make the various curves which are needed to enable it to reach every portion of the uterine surface. The technique which I recommend is as follows:

The operation should begin with a thorough intrauterine douche of corrosive sublimate, about 1 to 3,000. This may be given by any form of intra-uterine douche box ——, World, uptown."

pipe, but I think that the danger of retention of the fluid is best avoided by the use of the instruments I show. The cervical speculum is that devised by Dr. W. L. Burrage, only modified by increasing its size to that which is suited to the parturient uterus. When it has been placed in position in the cervix, the tube is attached to a fountain, or Davidson syringe, is carefully emptied of air, and passed through the speculum to a point near the fundus of the uterus. The advantages of this tube are - first, that its size is so small in comparison with the speculum that a free return of the fluid is provided for; and secondly, it is made of drawn brass, and can therefore be sterilized after each case by heating it red-hot in the flame, the only way in which a tube can be sterilized. When the uterus has been thoroughly douched, the curettage may be performed through a Sims speculum, or with the patient upon her back and without a speculum, as the operator prefers. The curette should be bent so that its cutting edge is directed towards the concave side of the curve, and the curve should be sufficiently sharp and long to permit the blade to reach the anterior wall of the given uterus at a point near the fundus. The instrument should then be introduced to the fundus. held lightly between two fingers and the thumb, and made to cover the whole anterior wall till every portion of its surface yields the firm, grating sensation to the touch, which is characteristic of uterine tissue. It should then be given the opposite curve, and made to cover the whole posterior wall in the same thorough manner. Next the curette should be so bent that its cutting edge will correspond to one lateral wall of the uterus; that wall should then be curetted, and while the instrument is thus curved, it should also be made to pass across the fundus. The same treatment should then be given to the other lateral wall. The intra-uterine douche should then be repeated, and the surface of the uterus should be covered with iodoform. This may be done by the use of iodoform bougies, but is, I think, much more thoroughly accomplished by packing the uterus with iodoform gauze through the cervical speculum, which is already in position. This completes the

My experience in the last five years warrants me in stating that when such treatment as this is adopted before the constitutional symptoms of sepsis are pronounced, its results should be uniformly good. In many of the cases the next temperature is normal, in the vast majority it is normal within forty-eight hours, and no subsequent symptoms appear. In a few cases the convalescence is more protracted, but out of the large number of cases which I have treated in this way I have never seen a fatal result in a case in which the treatment was instituted early. When the stage of marked constitutional infection has been reached, the outlook is far less hopeful, yet even then a thorough curettage will sometimes lead to the recovery of apparently hopeless cases, if backed by active supportive treatment; and it is an absolute rule that no woman should be allowed to die from obstetric sepsis without a resort to this procedure.

AN UNUSUAL ADVERTISEMENT.—Old superstitions die hard, as is shown by the following curious advertisement from a New York daily paper within a month: "CAUL FOR SALE, reasonable. Address—, box——, World, uptown."

SPRAINS AND DISABLED JOINTS.1

BY E. H. BRADFORD, M.D.

It is a truism which will admit of no dispute that a patient's condition should never be made worse by treatment, and yet it sometimes happens that an excess of care does harm. Joints become disabled after a slight injury — not from the injury, but from too great caution in treatment.

The following cases will serve as illustrations:

Case I. A young lady, twenty-three years of age, when a student at Vassar College, sprained her right ankle. She was not a person of robust health, and the sprain was in no way unusual. She was treated by a physician in the neighborhood, who applied a stiff bandage, which was worn for several weeks. This was afterwards removed, the foot again examined, and a stiff bandage re-applied. The patient was told that if inflammation set in, there would be danger of a stiffness and a disabled condition at the joint which would cripple her for life, and that as long as there was pain and swelling, inflammation was present.

The young lady gave up her studies at Vassar, returned to her home, and for the following six months used her crutches, as she found that any attempt to walk on her sprained ankle caused pain. This she regarded as an indication of inflammation, and as demanding rest. At the end of six months an apparatus was applied to the ankle which enabled her to walk without crutches for a while, but she again turned her ankle and resumed her crutches.

In the following year the patient sprained her left ankle in attempting to walk with a cane. This ankle became painful and swollen, was treated by a stiff bandage; and the patient being unable to walk, she was confined to a wheeled chair, judging that pain and swelling demanded the disuse of either ankle, and that unless great care was used she would become crippled for life.

She remained in this condition for six months, and was brought to the Carney Hospital for treatment, not having stepped for a year upon either foot. On examination it was found that the muscles of both legs were weaker than usual. The patient was of a spare build and nervous type, but otherwise sufficiently healthy, though there was said to be a tubercular family history. All motions in both ankles were nor-There was no swelling of the joint proper, though there was said to be swelling of the foot at times. There was no malposition of the feet. The patient was timid and nervous (but no more so than usually seen in chronic invalids), but was thoroughly impressed with the necessity of the disuse of joints previously sprained, lest inflammation should follow and increase, perhaps necessitating amputation, as had been told her by the physician she had consulted at the time of the spraining of the first ankle.

Both ankles were bandaged firmly, the bandage being constantly worn. If these were removed, swelling of the feet would follow, which increased the anxiety of the patient.

The condition was manifestly one where the ankles were disabled by prolonged fixation and bandaging. The necessary treatment naturally consisted of improvement in the circulation of the limbs and the development of the muscles. This, in addition to the

¹ Read before the Boston Society for Medical Improvement, March 26, 1894.

furnishing of ankle-supports at first, and flat-foot plates (which were gradually removed) was all that was sufficient to establish a complete and permanent cure, although the treatment necessarily involved a period of several months.

CASE II. A lady, forty years of age, of active temperament, but without great physique, sustained a sprain of the left knee. There was pain and effusion into the capsule of the joint, which was properly treated by fixation and compression. Later, the fixation splint was removed for a time, but was afterwards re-applied; but the bandage compression was continued, and the patient told that if there was any increase of the swelling at the knee, it would be necessary to resume the fixation apparatus.

After a time the patient changed her residence, and came under the care of various surgeons who successively recommended fixation and compression. After a while the removal of either the bandage or the apparatus increased the painfulness of the joint and the swelling, so that the patient was practically disabled.

On examination it was found that the knee was smaller than the other knee. There was atrophy of the muscles above the joint of the compression. There was some puffiness of the subcutaneous tissue in the space between the ligamentum patellæ and the condyles. There was no swelling or fluid in the sac of the capsule or the patella. This patient was extremely apprehensive of any attempt to allow greater motion at the knee, or to diminish the bandage which tightly bound, not only the joint, but parts above and below it. A great deal of persuasion was necessary before the patient was willing to consent to any attempt to gradually remove the bandage. The removal of the bandage was gradually done, however, and was followed by gradually increasing gymnastic exercises developing the muscles of the leg. After several months a perfect cure was established, which has remained permanent in the subsequent three years.

CASE III. Similar to Case II, with the exception that both knees were affected. The bandage was worn firmly applied to both knee-joints. There was great atrophy; but on examination there was no evidence of any inflammatory or disorganizing process. There was complete motion at the joint; there was no swelling; there was muscular atrophy above the joint and also in the muscles of the leg. Pain and swelling were complained of if the bandages were removed, or if the patient took any active exertion.

This patient had been acting under the advice of several physicians who had examined her successively, and had informed her of the danger of using a sprained joint too soon.

The patient was unable to arrange for continued treatment, returned to her home, and at the latest report considered herself permanently disabled and had given up her occupation.

Although these cases are extreme ones, they will serve to illustrate a common opinion in the minds of the profession that sprained ankles and knees are to be treated with a good deal of care; that they are extremely tedious cases, and should be managed with great caution. This opinion is partly based upon what may be termed a tradition that anything involving the joints is hazardous. This belief, which amounts in some instances almost to a superstition, is analogous to what prevailed in the past generation as to opera-

tions on the larger cavities, namely, the abdominal, pleural and cranial cavities.

In view of this feeling as to the necessity of caution in the treatment of any injury of the joint, it is well to consider carefully what dangers surround injuries of joints, and why there is need of special care. The chief dread after injuries of this class is of a resulting stiffened joint; and it may be desirable to call to mind the causes which will give rise to anchylosis in the knee and ankle, for these are the joints most exposed

to injuries which are classed as sprains.

The pathological processes which give rise to stiffness at the joints are: (1) tubercular ostitis or synovitis; (2) the rheumatic or rheumatoid affections; (3) that alteration of the condition of the peri-articular tissues which is often seen with an impaired condition in the nutrition of the synovial surfaces and with the exaggerated sensitiveness which is observed in the neurasthenic or so-called hysterical joint. It may be said of the last of these that fixation is the method to be used most sparingly of all methods of treatment in cases of this class.

Tubercular processes may, and frequently do, follow violence. The well-known experiments of Schuller demonstrate this fact beyond doubt; and yet, pathological evidence would show that in healthy adults without tubercular bistory, the danger of tubercular ostitis or synovitis following an injury, is so slight as to be disregarded — in the same way that the danger of typhoid fever following the ordinary exposure to cold is so slight as not to disturb the judgment of any physician in advising his patient.

The tubercular processes develop, as is now known, only where the requisite diathesis is present, and are more frequently seen in children than in adults, for the reason that well-organized and solidified bone resists the invasion of the tubercular bacillus, which attacks, in adults with a predisposition, the lungs rather

than bone.

No physician, therefore, would be justified in pursuing an overcautious treatment in a sprain of the ankle, in the fear of tubercular ostitis - that is to say, caries - in a healthy adult who has sustained an in-

jary.

This is even more true of rheumatic or rheumatoid processes, there being no positive evidence whatever that the rheumatoid, that is constitutional processes are ever caused by injury, although they may be aggravated by violence. The same is, of course, true of the semi-septic processes which are manifested in puerperal synovitis.

This suggests the query as to what lesion is found in a sprain. The inquiry may, for brevity, be limited to the knee- and ankle-joint, as being the parts chiefly exposed to sprains, and also as being the most important joints. Sprains of the hips are chiefly contusions, and are not to be classified in the same category. If a dissected ankle be examined and submitted to a violent twist, it will be seen that the forced motion causes a strain upon the ligaments and the tendons, chiefly of the medio-tarsal joint, and that contusion of the bone itself is not the rule.

In sprains, the weight ordinarily is thrown upon the forcibly inverted foot or the forcibly everted foot. In some instances the foot may be forcibly flexed or extended. In the latter instance, although the astragalus is involved in the motion, the strain falls upon the

The astragalus in its articulation with the tibia and fibula is so thoroughly mortised, and the os calcis is so well protected by the deltoid and astragalo-calchoid ligament, almost the strongest of the body, that displacement is not to be anticipated except in the severer injuries.

It will be seen on examining a dissected foot that the medio-tarsal articulation is capable of quite free movement if it were not for the ligamentous checks. and that in a severe fall or twist, or other violent injury, the parts which would suffer would be chiefly, as has been mentioned, the ligaments and synovial sheaths, as well as the ligamentous fibres and attachments of muscles. With the exception of such violence as would cause fracture, it is demonstrable that a complete rupture of the ligaments is not to be expected in the ordinary accidents which give rise to the condition known as sprains.

The same facts are true, but to a less degree, of the knee-joint. The motions in which a strain is to be anticipated are a lateral force pressing the knee in or out, an exaggerated flexion of the knee, or a twist. Extreme hyper-extension is rarely met, and if of sufficient violence to cause anxiety, would occasion a

fracture.

The clinical symptoms which are seen in sprains are as follows: The patient meets with a violent twist or The weight of the body is thrown upon the joint which happens to be fixed or placed in such a position that the weight of the body exerts improper leverage, and an unusual strain takes place. The muscles being violently exerted to preserve the equilibrium, the patient suffers extreme pain, and may be faint or be attacked by a fainting sensation; any attempt to use the limb may be either impossible or excessively painful. This is followed by swelling, sensitiveness and discoloration. This condition remains for a comparatively long time. Attempt at walking is painful, and the joint remains in a weakened condition for a long

If the parts were dissected at this time, it is probable that there would be found the ruptured capillaries with effusion of blood, effusion of serum, and rupture of some of the ligamentous fibres, and probably also, in some instances, of the fibres of the capsule. An increase of synovial fluid sometimes takes place in the knee, and extravasation of blood. An injury to the cartilages, or extravasation of blood under the cartilage following violence at the ankle not sufficient to fracture, would seem to be, from the anatomical position of the ankle, exceptional.

TREATMENT.

If we accept these statements as correct, it would appear that, with the exception of such support as is necessary to give time for the repair of the few stretched ligamentous fibres, treatment should be directed at first to check the effusion and extravasation.

This can be done in several ways: (1) by compression carried on for a short time; and (2) by such means as would improve the circulation in the periarticular tissues, namely, the application of heat and cold, massage, and motion of the joint, which, however, should be restricted in character so as to prevent any excess of motion or stretching of the strained liga-

The length of time for which it is necessary to proligaments and tendons of the fore part of the foot. | tect from extreme motion will vary in any individual case according to the amount of reparative power, the amount of violence and the age. But there would seem to be no justification for the popular opinion that a sprain is worse than a break, an opinion which would appear to be based upon the over-cautious treatment following such injuries, which, by interfering with the proper circulation of the part and guarded motion, increases the sensitiveness and produces a condition which, if unchecked, may develop a disabled joint, which is more tedious than an ordinary fracture.

This condition is what is occasionally seen in joints which are stiffened simply from disuse, for, as is well known, in limbs which are held stiff in the treatment of fractures, there is more pain and sensitiveness in first attempting to move the uninjured joints which have been fixed in the treatment of the fracture than in the fractured part itself.

The condition following a sprain is somewhat analogous to that seen in the soft parts near the site of fractures, namely, the circulation is interfered with, there is a certain amount of soreness on motion, and the muscles and ligaments are strained. As in the condition which follows the treatment of fractures, a great deal of stiffness of the fixed joints remain, and on any attempt to use the limbs there is pain.

In the treatment of sprains we should not be influenced by what is termed by Verneuil, "anchylophobia." A sprain is not a fracture; at most, it is a tear or a rupture of some of the fibres of certain ligaments. This unites readily. If a tendo-Achillis can be safely moved in a fortnight after tenotomy, certainly a few ruptured or stretched ligamentous fibres should not be regarded as grounds for fixation for a longer time.

The patient's pain is the natural check to an excess of motion.

Fixation by apparatus is only necessary if demanded to stop pain for a short time after a severe sprain.

In the early stages motion within the pain-limit is harmless; in the later stages of a sprain, motion and use should be allowed up to the point of pain; and in some instances in hypersensitive persons guarded and protracted motion, even beyond the point of pain, is indicated.

Compression may be advisable for a short time during what may be termed the period of effusion, after that it becomes injurious.

As means to improve the circulation applications of heat and cold and rubbing are needed from the first, as well as during the whole treatment; and use of the limb, when permissible through absence of pain, is a natural means of improving circulation and nutrition.

The establishment of a precise diagnosis is of the most importance in sprains. If this is certain, the treatment is clear and simple.

DEFORMITIES OF THE SEPTAL CARTILAGE.

BY A. COOLIDGE, JR., M.D., Physician for Diseases of the Throat, Massachusetts General Hospital.

THE septal cartilage may be considered as roughly triangular in shape, and is commonly known as the triangular cartilage in English text-books. It is held in a bony frame, except along a portion of two of its sides and the angle between them. This free angle carries the tip of the nose (Fig. A). The cartilage is very Read before the Boston Society for Medical Improvement, March

elastic, and has a wonderful power of straightening itself even after extensive injury, but we find it more or less irregular in a very large number of persons.

For convenience these irregularities may be divided into four varieties (Fig. B.); (1) the cartilage, as a whole or in part, may be simply bowed or bent from its perpendicular plane without being broken or thickened; (2) it may have been fractured along one or more lines, forming a sharp bend or angle; (3) it may present a spur or ridge of cartilage projecting from its surface; and (4) it may have been dislocated from one of its bony attachments and united in a new position. Very often more than one of these condi-

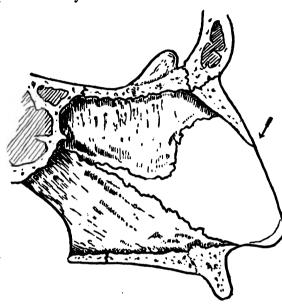


Fig. A. - The Nasal Septum.

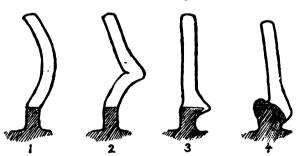


Fig. B. — Diagrammatic Section of the Septum, through a line represented by the arrow in Fig. A.

tions is found at the same time. Spurs are often found on the convex side of sharp deviations, and more commonly still along the synchondroses of the cartilage with the vomer or the ethmoid, either with or without a certain amount of dislocation.

In order to form some idea of the frequency of these deviations, I have examined the septa of a number of patients in a hospital clinic at random. Of course, as many of these patients came to the hospital for some trouble of the nose, the statistics are of no value as showing the frequency of deviations in the community at large. From one hundred cases a well-marked ridge, in one or both nostrils, was found along the cartilage-vomer synchondrosis in fifty-eight; and along the cartilage-ethmoid in fifty-one. A noticeable bend of the cartilage in some part of its

extent occurred in forty. In six there had been an evident dislocation of the cartilage from the vomer; and in four an old fracture of the cartilage.

Concerning the etiology of these deviations there can be no doubt that most if not all of the cases are of traumatic origin. The injury may not have been severe enough to be remembered. It may have been a series of minor blows on a nose already bent or weakened. The septum may have changed its shape subsequently in attempts of nature at repairing the in-Whether any other cause produces these deformities is a question which is frequently discussed; the principal reason for believing that it does is the redundancy of tissue often present. A bowing cartilage set in a solid bony frame suggests an abnormal development of the cartilage; in most cases, however, the bowing can be explained by supposing an old greenstick fracture. Where the cartilage bows into one nostril, the tip of the nose and sometimes the nasal bones also are deviated towards the opposite side of the face, the bony septum often joining in the same bowing. One nasal cavity is thus encroached upon and the other one enlarged. In the case of a simple spur, respiration may be impeded in one nostril without any corresponding enlargement in the other. Up to a certain point these changes in size of the nasal cavities are compensated for by an enlargement of the turbinate bones opposite a concavity in the septum and their retrocession opposite a convexity. Beyond this point symptoms of nasal obstruction are found, and for this obstruction we may be called upon to operate. In front of the anterior end of the lower turbinate, opposite the anterior border of the nasal process of the superior maxilla, the nasal passage is narrow; no change in the external wall is possible; and obstruction to breathing is more easily brought about.

In operating on the cartilage it must constantly be borne in mind that we are not dealing with a solid structure, but with one that is very elastic, and liable to be changed in shape by cicatricial contractions and by other causes. The elasticity of a bent cartilage is sufficient to bring it back to its original shape even after it has been held straight for a long time. It may be bent straight several times a day, or a splint put against it for weeks without accomplishing anything; to remain in a new position its resiliency must first be destroyed and redundant tissue must be removed. For this purpose several methods and several instruments have been brought forward. For simple bowing of the cartilage, Heylen, in 1847, dissected the mucous membrane from the projecting convexity, and removed a piece of the cartilage. Different modifications of his operation have been described since. Blaudin punched small disks in the cartilage with an instrument not unlike a couductor's punch. Steele introduced a modification which, used in the same way, produces stellate incisions. A septum redresser, consisting of a pair of flat, smooth blades for crushing or refracturing the septum, was brought out by Adams in 1875. Asch describes an instrument, one blade of which is flat, the other with a sharp edge, like a can-opener, for making a series of incisions through the cartilage. Roberts advocated the division of the cartilage with a bistoury, and the insertion of pins to hold the fragments together until union has taken place. Ingals, with a small nasal trephine, drills out a few cores of cartilage lengthwise without perforating the mucous membrane

ridges, a knife, if the obstruction is not osseous, may be used. Bosworth's nasal saw, Seiler's burrs, and the nasal trephine of Curtis, driven by an electric motor, are especially useful. To hold a septum in position after operation, we find recommended by different authors gutta-percha, hard rubber, soft rubber, ivory, glass, tin and zinc covered with cotton, and simple packing of antiseptic gauze or cotton. The problems presented to us by the septum are so varying that it seems to me that one method cannot be used to the exclusion of others. Before speaking of the treatment of the different forms of deviated cartilages, I will summarize a few general rules which I think it is always well to bear in mind.

Teo much should not be undertaken at once; it is better to leave something for subsequent operations than to run the risk of leaving the septum with too little support or of perforating it. But an accidental perforation may heal by first intention, if there be no loss of substance, and the wound is kept aseptic.

The resiliency of the cartilage at the point where it is obstructing respiration must be destroyed, so that no pressure is required to hold it in place while healing.

Asepsis is of great importance in shortening the time required in healing, and in preventing soreness and foul discharge.

A smooth surface heals much more readily than a rough one, even if more mucous membrane has been removed, but otherwise it is advisable to save as much of the mucous membrane as possible.

A splint or packing is always disagreeable to the patient, and often retards healing. Wherever it is possible to choose an operation which requires no splint and no packing, or for not more than a day or two, it is much less of an undertaking for the patient.

These operations are always difficult with children, on account of the small size of the nose and their intolerance of packing.

Where the cartilage is not bent, and the obstruction is due to a ridge along the lower border, the ridge may be removed with a knife, a trephine or a saw. latter is generally preferable, as the bleeding is less than with a knife and the surface is left smoother than with a trephine. If the septum is bent, and a spur is also found in the convex or occluded nostril, I believe that a mistake is often made in simply removing the obstructing spur or thickening. This applies especially to those spurs found on the apex of the line of an old fracture (Fig. B, 2). I am certain that I have seen the bowing of a cartilage much increased a few weeks after a septum has been thus shaved. This danger is greater the farther the spur is situated from bone, and is greater in young than in older persons. I believe that often a spur, at least for some years after its appearance, is a provision of nature for strengthening a weak point; for preventing further bending or dislocation; and that it is a question for judgment in each case whether a septum can be deprived of it safely. Where the conditions allow it, and the obstruction is due to redundant tissue, Bosworth advises that a new septum be sawed out, as one would a board from a

Roberts advocated the division of the cartilage with a bistoury, and the insertion of pins to hold the fragments together until union has taken place. Ingals, with a small nasal trephine, drills out a few cores of cartilage lengthwise without perforating the mucous membrane of the concave side. For the removal of spurs and

operation under cocaine. In such a case I should etherize the patient, free the floor of the obstructed nostril from the dislocated base of the septum by a saw, refracture, and destroy the resiliency of the cartilage with a Steele or Adams nasal forceps, until no cartilage retaining its elasticity obstructs a free passage for respiration. A splint, as large as can be passed through the nostril, can then be laid against the septum, and held in position by gauze. If necessary for better support, another splint can be put in the other nostril. If the nasal cavity be washed out with corrosive sublimate solution and a tin splint covered with iodoform gauze be used, the wounded surface will often be kept clean for several days. By changing the splint on the fourth or fifth day, it may not be necessary to remove it again until the end of three weeks. I have also used splints made of glass with the edges rounded. Their polished surfaces do not irritate granulations, and the nostril can be irrigated without removing them.

Disadvantages of such an extensive operation are, discomfort to the patient from nasal splints and a chance that subsequent cicatricial contraction may again distort the septum. If the nostril is small, care must be taken that adhesions do not form between the septum and turbinates, or the floor. The patient should be warned that he may have to be observed for

some time.

When a bent septum is obstructing respiration by simply bowing into one nasal cavity, it is often possible to correct it by an operation much easier for the patient. For this I have obtained good results from two different methods. The first is the old method of dissecting out a piece of the cartilage from the projection. I first try to dissect a flap of mucous membrane from over the projection in the obstructed side, and turn it up, keeping it out of the way with a small pledget of cotton. I do not expect to save all of the mucous membrane of this side, and do not spend much time in trying to preserve it. An incision is then made through the anterior edge of the exposed cartilage, and with a blunt instrument the mucous membrane of the concave side separated from the cartilage. A piece of cartilage, perhaps half an inch long horizontally by a quarter-inch wide, is then cut out, leaving only the intact mucous membrane of the concave side between the two nostrils. If it seems necessary incisions can be made into the edges of the cartilage left on the sides of the hole. The flap of mucous membrane is then replaced, and iodoform gauze put into the nostril sufficient to push what is left of the septum towards or beyond the median line. This packing can generally be left out in a few days. It is better not to take out a larger piece of cartilage than is necessary. Cicatricial contractions during subsequent weeks or months may change the shape of the septum; if they are not extensive, the result may be an improvement, a straightening of the septum; if they are too great, they may bow it in some new direction. An objection to this operation is the time that it takes if bleeding is persistent and the nostril narrow. Also, if much mucous membrane has been sacrificed, the healing may be slow.

The second method is the operation of Ingals, of trephining out cores from the obstructing cartilage. After cocainizing both sides of the septum, a trephine, with a diameter no greater than the thickness of the cartilage, is entered through the convex side into the

resistance to replacement. It is kept between the two layers of mucous membrane, drilling out a round core of cartilage for as long a distance as is necessary, and brought out again into the same nostril. This is repeated as often as is necessary to remove redundant cartilage or destroy its elasticity. The cores may be taken either horizontally or obliquely, or both. the septum can be pressed into the median line without force, it is held there by packing or a splint from a few days to two or three weeks. The passage of the trephine should be watched from the opposite or concave side through the mucous membrane in order to avoid perforating. This operation requires but little time; there is seldom any trouble from bleeding; and all of the mucous membrane is saved except where the trephine enters and leaves. Enough cartilage should be removed to replace the septum without pressure, the splint or packing being only necessary to steady it.

In closing, I can only repeat what I have said before, that the cartilage of the nose often slowly changes its shape for reasons not entirely understood, and that in some cases obstruction recurs to a greater or less extent, but the ultimate results of most of the cases which I have been able to follow have been generally satisfactory. The subject has not yet received the attention it deserves. A patient is sometimes perpetually annoyed by the blocking of one nostril; chronic inflammatory trouble is kept up, and the ear may be affected. In such cases relief can be expected only by establish-

ing normal nasal breathing.

IMPERFECTLY STERILIZED MILK.

BY E. M. BUCKINGHAM, M.D., Instructor in Diseases of Children, Harvard University.

DURING the summer, the problem of keeping babies' milk sweet is important, and the object of this communication is to call attention to certain practical points connected with it.

In some of the large cities we are now so fortunate as to have laboratories where milk can be prepared by prescription in what proportions we please, and so treated by heat as to remain sweet for a sufficient time. This is by all means the most satisfactory way, as it saves trouble and secures definite results, while it adds to our knowledge. If the prescription does not fit the case, it is the fault of the prescriber and not of the chemist. But there are people who for one or another reason will not, or do not, employ the laboratory, and for them the physician ought to be able to prescribe, not so exactly, that is impossible, but so as to avoid great errors.

In my own opinion, of the various modifications to which cow's milk can be subjected in order to fit it for infant's food, sterilization is the least important; that is, the proper proportion of fat, albuminoids, etc., to fit the milk for the digestion and nutrition of a particular baby is always important, while the destruction of bacteria is of consequence only when their presence is likely to do injury. Practically, the presence of a few bacteria in milk which is to be soon used, does not under ordinary circumstances do any appreciable harm. In the warmest weather, however, and in some other cases, destruction of bacteria before they have time to work mischief becomes of importance. It is of the cartilage at a point where it seems to offer the greatest domestic means of effecting this destruction that I wish

to speak, pointing out that if the work is badly done, the result may be worse than if it is not undertaken.

Destruction of bacteria occurs when milk is exposed to sufficient heat for a sufficient time under proper conditions (sterilization). Exposure for a less time to less heat, while it does not destroy all bacteria, may be so regulated as to render them comparatively inert (Pasteurization). Intense cold renders them less virulent while the exposure lasts, but apparently does not otherwise injure them. On the other hand, exposure to a medium temperature increases their activity. Therefore, milk can be kept for some time upon ice; but when we heat it for sterilization it must pass through a fermenting temperature, and if the period of this medium exposure be unduly prolonged, great damage may be done to the milk. Apparently, heat does not affect the poisonous ptomaines already formed; aud it follows that milk brought slowly to a sterilizing temperature may be quite unfit for food though sterile. Precisely the harm has been done that was meant to be prevented. Milk should be placed in a steamer already filled with steam, and not in a cold steamer over cold water and a slow fire. Directions to sterilize in a corked bottle are given only by those who have never tried the experiment and who forget the explosive force of steam. To first sterilize and then cork is illogical and dangerous. The proper thing is to close the bottle with tightly-packed cotton-wool. Then heated air and steam are driven out through the packing, and the cool air entering afterward is filtered so that it becomes free from bacteria.

As milk cools after sterilization, it again passes through a fermenting temperature. If no bacteria remain, that does no harm. If others are allowed access, and if the fermenting temperature is long continued, much damage is done. In this case the milk is first made sterile and then reinfected under peculiarly dangerous conditions. Milk properly sterilized and then placed in an open pitcher or pan upon a window-sill will cool quickly on a cold winter's day, and little harm may be done. The same course in August will probably lead to sickness of the baby, and if its possibility is not thought of, the result may be very serious. Even if the milk is cooled without removing the cotton stopper, it is better to do it quickly, because the packing may be imperfect. The same reasoning shows the desirability of sterilizing each meal in a separate bottle.

It might seem unnecessary to state these simple facts, but experience shows to the contrary. I have again and again met with every one of the errors pointed out, and have seen that students and physicians who would not be guilty of making them do not always recognize them when made by others. must be remembered that most mothers and nurses are not bacteriologists, and must be given minute rules or an explanation of principles, or both.

That too prolonged sterilization is an injury to milk may not be universally allowed; but that it is so is the belief of many, and there are facts tending to support this view. If an error, it is one likely to be made by the over-anxious. Let me give an instance; A child of nine months, fed upon milk modified and sterilized at home, became pale, with occasional very slight digestive disturbances, temperature irregularly ranging from 98° to 103.5°, and evident pain on being moved. Appetite was ravenous for the first part of a meal; but he soon tired of it, and was not getting enough food. Having treated him for rheumatism without effect, and clety, January 3, 1894.

observing slight swelling and redness of the gum, it occurred to me that he might be suffering from scurvy. Questions developed the fact that his milk had recently been boiled for two hours in a sterilizer. It was then directed to be given raw in the morning, the afternoon supply to remain in the sterilizer but ten minutes, and the proportions to remain unchanged. Orange-juice and a teaspoonful of beef-juice daily, made the rest of the treatment. From the beginning his appetite became first-rate, and he was very soon entirely well.

Clinical Department.

CASES ILLUSTRATING SOME OF THE MORE UNUSUAL CAUSES OF URINARY RETEN-TION.1

BY FRANCIS SEDGWICK WATSON, M.D., OF BOSTON, Instructor in Genito-Urinary Surgery, Harvard Medical School; Visiting Surgeon, Boston City Hospital, etc.

CASR I. A patient, aged forty years, who had counection with a woman while drunk, missed the mark, and the penis was violently bent during erection. A brisk hemorrhage followed from the urethra, but presently ceased spontaneously. There was no infiltration of blood into the peri-urethral tissues. During the next day the patient experienced no trouble in urination beyond moderate pain during the act. On the second day he was unable to pass any urine. He was seen about eighteen hours after retention had begun. A No. 22 (French scale) webbing catheter could be passed readily into the bladder, and about one quart of urine was evacuated through it. It was then withdrawn. The next succeeding attempt to urinate was wholly unsuccessful; and when it was made, a small, hard bunch appeared on the under side of the urethra about three inches behind the meatus. Twelve hours after the second attack of retention began he was again seen; the catheter passed readily as before, and was tied into the bladder; the bunch beneath the urethra was then the size of a horse-chestnut, and was tense and fluctuating. On the following day the patient removed his catheter and tried to urinate naturally. The swelling beneath the urethra at once increased in size, and severe pain was felt at this point. No urine passed. The catheter was replaced a few hours afterward. That evening the patient had a chill and a temperature of 103° F., and the skin over the swelling was reddened. The swelling was then freely incised, and about one ounce of pus was evacuated. The abscess cavity from which it came communicated with the floor of the urethra by an irregular rent, evidently the site of the original rupture of the urethra. The cause of the retention of urine was then obvious and consisted of a valve-like flap of the mucous membrane, its free border toward the posterior urethra and its attachment towards the meatus; it had been dissected off the floor of the urethra and lifted upward to the roof of the canal by the force of the outflowing stream of urine, so as to completely close the canal, and to prevent the passage of the urine beyond this point. Urinary infiltration and peri-urethral abscess followed in due course as described. The urethral incision healed rapidly, a catheter being tied into the bladder for about three weeks. A traumatic stricture

formed at the point of injury, and was divided by internal urethrotomy three years later, which was also three years ago. Up to the present there has been no recontraction.

CASE II. This case had the same history as the preceding one; but the injury in this instance consisted in a partial rupture of the corpora cavernosa, the urethra remaining intact. There was an extravasation of blood within the sheath of the penis which extended the whole length of the organ, which was enormously swollen and discolored. Urinary retention declared itself on the first attempt at urination following the accident. A No. 22 (French scale) catheter met a solid obstruction at two and one-half inches from the meatus. A No 16 was then tried, and passed on into the bladder, but was a tight fit at the point mentioned. This patient was catheterized about once in four hours during the next three days in preference to tying in a catheter, as it was feared that sloughing of the urethra at the point of narrowing might result from the presence of the catheter. On the fourth day the swelling began to subside and the patient was able to void the urine naturally. He subsequently recovered without any ill-effects from the injury. In this case I assumed that the retention was due to the compression of the urethra near the seat of the injury by the extravasated blood.

Case III. A young man with a persistent gleet, following the advice of an apothecary, used an urethral injection of corrosive sublimate, of a strength of 1 to 1,000. Retention of the urine promptly ensued. The family physician, not having been told of the use of the injection, mistook the case for one of impassible deep organic stricture, and injured the urethra slightly in making forcible efforts at catheterization. The bladder was finally relieved by suprapubic aspiration. On the following day I first saw the patient, etherized him, and passed a No. 30 (French) sound into the bladder without the least difficulty. The bladder was then emptied, and late in the evening the patient urinated spontaneously while in a hot sitz bath, and thereafter had no further trouble.

CASE IV. A young married man, who had subjected himself to the chance of gonorrheal contagion, used an urethral injection of corrosive sublimate of a strength of 1 to 500 as a preventive of the disease. Urinary retention followed; as in the last case, but was relieved by a hot sitz-bath and an opium and belladonna suppository at the end of fourteen hours, as in the other case.

Case V. A gentleman, about fifty years of age, was attacked by severe abdominal colicky pains, for the relief of which he was given full doses of morphine. Urinary retention ensued, the bladder was evacuated by the use of the catheter, which was required for three days, during the first two of which he was under the influence of the morphine. Twenty-four hours after omitting the drug he resumed the natural passage of the urine, but subsequently a prostatic abscess formed, opened into the urethra, and before it was cured by surgical operation it had reduced the patient to a somewhat serious condition.

CASE VI. A man, fifty years of age, became dead drunk by drinking large quantities of beer. Upon awakening about ten hours later he was unable to urinate, and about four hours more elapsed before he sought relief. The bladder was then greatly distended, the fundus reaching about half way to the umbilicus,

and he was suffering intensely. A catheter was passed without difficulty and a large quantity of urine was slowly withdrawn, and the patient at once regained the power of voluntary micturition.

Case VII. A man, forty years of age, whose experience was identical with that of the last patient, except that he was not so fortunate as to regain control of his bladder immediately after its being relieved of its contents. It was necessary to use the catheter for one week. For the first twenty-four hours it was passed at intervals. After that it was tied in. On the fifth day it was withdrawn, but the inability to urinate still persisting it was replaced. On the seventh day the control of the bladder was regained, and the patient had no further trouble.

Case VIII. A man, thirty years of age, who had previously passed two small concretions by the urethra, came one morning to the hospital with a stone impacted in the urethra just behind the fossa navicularis. It was so tightly wedged that no urine could flow past it; and the patient had been suffering from retention for fourteen hours in consequence, and was in great pain. The stone was extracted with some difficulty after cutting the meatus, and the bladder being emptied with a catheter, the patient was relieved.

CASE IX. A young man came to my office suffering greatly, due to a stone which was firmly lodged in the prostatic urethra. Retention of urine had been complete for sixteen hours. The stone was pushed back into the bladder by a sound passed into the urethra, and afterwards caught and crushed once with a small lithotrite, and then removed with Bigelow's evacuator, and the bladder emptied by a catheter. This patient suffered no further inconvenience.

CASE X. A man, thirty years of age, engaged in a "rough-and-tumble" fight, was knocked down by a blow of the fist, and while lying on the ground was kicked violently in the back, the blow falling upon the third and fourth lumbar vertebræ. The patient walked at once to the hospital, after getting free from his assailant. The only injury that he was then thought to have sustained was a cut lip. That night he had some trouble in passing his urine, which flowed in a feeble stream only. During the next day this difficulty increased; and twenty-four hours after the injuries were received, complete retention occurred. He only mentioned this twelve hours later, at which time the bladder was distended, its apex reaching about three inches above the symphisis pubis. A catheter was passed easily into the bladder, and the urine was slowly withdrawn. The catheter was required twice more in the course of the next eighteen hours, after which the power of voluntary urination was restored.

In the two alcoholic cases, and in the one from opium, the cause of retention was presumably anesthesia of the nerves of sensation which originate the call to urinate, and partial paralysis of the expulsive muscular apparatus of the bladder; and in the alcoholic cases the rapid filling of the bladder.

APPENDICITIS LITERATURE. — Dr. Senn, referring to the literature of appendicitis, says: "It appears to me that it would be more profitable in the future for this department of abdominal surgery to write less concerning individual experience, and elaborate more thoroughly upon a pathological basis the conditions which demand surgical interference.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVE-MENT.

JOHN T. BOWEN, M.D., SECRETARY.

REGULAR Meeting, Monday, March 26, 1894, President, Dr. C. F. Folsom, in the chair.

ADENOID VEGETATIONS, AND CLEFT PALATE.

DR. A. COOLIDGE, JR. showed a patient with adenoid vegetations, who had also a cleft palate, so that the vegetations could be clearly seen without the

reflected light.
Dr. S. W. LANGMAID: Dr. Coolidge will remember a similar case, a much older patient than this, and the interesting part of it was to see the way in which the wound healed after this adenomatous growth had been removed. It has always seemed queer to me that so few accidents occurred after such operations as are done for the removal of adenoma. It is a very bloody operation, may be a very long one; a great deal of surface may be denuded; a large wound is left, covering sometimes the whole of the naso-pharyngeal space; and yet a case of septic poisoning is almost unknown, and I have always wondered why that was. I think when Dr. Coolidge removes this he will watch the healing process with a great deal of interest, and will find probably, as I found in that one case, that nature immediately spreads a protective effusion over it. It is tone, shut off all communication with the larynx; completely covered by lymph of dense consistency which completely seals the whole wound, and that explains to me largely the fact that septic trouble so seldom follows the operation for the removal of pharyngeal adenoma.

REMOVAL OF THE LARYNX.

Dr. J. W. FARLOW: This man is forty-seven years old. In 1875, Dr. Lefferts, of New York, removed a tumor from his larynx. On April 1, 1892, Dr. J. Solis Cohen, of Philadelphia, removed the entire larynx, except the epiglottis, and also the first ring of the trachea, on account of carcinoma. The tracheal opening was stitched to the external skin, in order to diminish the chance of septic pneumonia from the food or secretions from the mouth. The lungs and trachea were thus shut off from communication with the mouth.

He was in bed eighteen months, during which time he had no voice at all. Recently he has begun to have a voice of fair strength, which can be heard about forty feet and he can also sing a little, showing the

ability to modulate the voice.

On the front of the neck, just above the tracheal wound, is a sac which he fills with air by a number of inspirations. In speaking, this dilated air sac gradually expels its contents, and the air, escaping into the mouth, seems to set in vibration a band which is on the left of the throat near the base of the epiglottis. This band can be seen with the laryngoscopic mirror, and is thought to be part of one of the constrictors of the pharynx.

Several long, stiff hairs can be seen growing on the posterior surface of the epiglottis. They come from the external skin which was turned in at this point. They sometimes occasion tickling and discomfort and require to be removed with forceps.

The interior of the trachea is very red and its walls

can be seen to move with the pulsations of the heart and aorta.

The only trouble of which he complains is the difficulty in eating and drinking. He has to press his hand against the front wall of the sac in order to push the food toward the esophagus and away from the sac. He says he enjoys smoking, and, as you see, holds the cigar in his mouth and smokes in the same way that others do. He must, however, forego the pleasure of

inhaling cigarette smoke.1

Dr. LANGMAID: When I saw the patient in New York I had no time to examine him. I have thought of the case several times, and have wondered whether there is any communication through the esophageal wall with the lungs. I myself doubt it. It seems to me that unless such a communication exists it is a case where this sac, which is an enlargement of the pharynx above where the laryux should be, is a one-celled lung. By some process — either swallowing air, which is not an unusual process, or some other way — he is able to distend this sac. Now he has a rudimentary lung. There is air enough for the short space during which he speaks. The puzzling part is how he can articulate words with his soft palate. The larynx is absent; there are no vocal cords. Experiments have been made with regard to the ability to articulate with the soft palate. It has been said that ventriloquists do it, and you will notice some similarity in this man to them; it is a distant kind of voice. Some physiologist, in trying to determine what produced the so-called headtaking an India-rubber ball, which was an artificial lung, and injecting air through the nostril, he could make the person experimented upon produce tones. Whether this person articulated words or not I do not remember, and I do not think it was stated; but I cannot conceive that there is any other explanation. The larynx removed, what is there to articulate with unless it be the soft palate and the tongue? The vibration of the soft palate would produce the tone - the voweltone, you may say; the mouth, the tongue, the lips, etc., would produce the consonants. I hope to study this case still further. So far as I know, it is unique. It is certainly remarkable, probably the most remarkable case there is where such articular speech can be produced without the aid of any organ which could be supposed capable of phonation unless it be the vibration of the soft palate and adjacent parts.

Dr. E. H. Bradford read a paper on

SPRAINS AND DISABLED JOINTS.8

Dr. W. M. Conant: I am very glad to hear this admirable paper of Dr. Bradford's. I am especially glad to have so timely a paper read at this time, because every year I see a few cases where there is not the slightest doubt that the condition of the joint has been due to misapplied treatment by the doctor in charge. It seems to me that coming with the authority of Dr. Bradford, we shall in the future hear much less about putting sprains in plaster bandages. Something more scientific should be advised than putting a joint in any form of stiff apparatus and allowing it to remain practically in this position for several weeks. My experi-

² Colombat de L'Isere.
³ See page 156 of the Journal.

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A good description of the case by Dr. Cohen is published in the Archiv für Laryngologie, Erster Band, Heft 3. Dr. Harrison Allen, in the Medical News for March 17, 1894, gives an account of his in-teresting experiments to determine the seat and nature of the man's

ence in a large out-patient department among the football and base-ball players, gives me a considerable experience with recent cases.

There are two other joints that, although not as often injured as the knee, should be spoken of, namely, the shoulder and the elbow, because they are frequently injured by court-tennis players and by pitchers. It is a well-known fact that there is what is known as "the pitcher's arm," which consists in some injury to the elbow or shoulder-joint; and in many cases if it is improperly treated, it means a permanent injury, and among professionals this means loss of salary. anatomy of the joint must always make a difference in the form of treatment adopted; and whether there is a sprain of the tendon or of the muscle, a wrench in the synovial membrane or some inflammation of the bursa, all these forms of injury demand special attention, and determine to a great extent the severity of the injury and the prognosis as to future use. I have seen more trouble from inflammation of the bursa than from what seemed at the time more severe injury to some other part. One might say that it is not possible always to distinguish the injury of the joint, and say that a given sprain is a sprain of the tendon alone, or of the ligament or of the muscle, and there are cases, it is true, where it is impossible to make this diagnosis. There are, however, a certain number of cases in which you can always as accurately make a diagnosis as if you had the joint dissected. In many cases where nothing but the ligaments are sprained and the synovial membrane of the joint has not become inflamed, the treatment is practically simple, and the case under proper treatment does remarkably well.

We must divide our method of treatment into either complete rest, or a certain amount of rest with passive motion and massage; and of the two, I prefer the latter. The complete rest, unless the injury is very severe, is not needed, and is therefore not wise. large proportion of sprains are better treated with a certain amount of rest, that is, limitation of motion; and a certain amount of passive motion best obtained by massage, is the best method of treatment. Possibly I can do no better in giving my own ideas of treatment than to describe how a man is treated when injured on the foot-ball or base-ball field. A man with an injury of a joint is immediately taken off the field; the clothing is removed, and the joint affected is put into hot water for from five to ten minutes. It is showered with cold water for a few minutes, and is then put into the hot water again. After remaining in the hot water for from five to ten minutes longer, it is taken out and carefully massaged from ten to thirty minutes, according to the severity of the injury. Then a flannel bandage cut on the bias is carefully applied over the injured joint. The endeavor is made to get a certain amount of support for the joint which shall take the place of the injured ligaments. Then if the man is able, he gets up on his legs, if it be a knee or an ankle; and if he can stand, he is allowed to walk. It is usually found that at first it causes a certain amount of pain, but that after a time this pain disappears. If a man can walk two or three rods, he can safely walk to his room. The next morning the handage is removed, when the same process is again ned, also in the afternoon; and it is wise for

have been seen by the attendant either in the

any increase in the tenderness of the joint, or in the ability to get about, and especially to come up on the toes, he is allowed a certain amount of active exercise on the leg affected. A man can do a very considerable amount of work with a sprained ankle or knee provided he is not called upon to twist said joint either to the right or left. I have yet to see any serious injury resulting from this method of treatment. It is modified, of course, according to the amount of injury; and in certain cases of injury to the joint it is unwise, when it is better to use a complete rest.

This method has been employed for the last four years at Cambridge, and there has been a good opportunity to see these injuries after the foot-ball and base-ball seasons are over, and to have an oversight of the joint long after the injury occurred; and I have yet to see the first case thus treated that I think was injured by this method.

Dr. R. W. LOVETT: I am particularly interested in the late history of these sprains, especially those sprains of the ankle which I see some years after the original injury, where the patient has a disabled foot. The original injury in some cases has been recovered from and forgotten, and only when this disability comes on is it remembered. In these cases there is usually one of two conditions: flattening of the arch of the foot, or elevation of the arch. Cases of flattening of the arch are usually relieved by felt pads or by a plate. The other condition, that Dr. Schaffer has spoken of as non-deforming club-foot, is where the plantar fascia is contracted and the outer border of the foot does not touch the ground or only touches it a little, and is much more difficult to treat than is flat-foot. The condition is one of imperfect flexion of the foot; the fascia is contracted, and a band can be felt in the bottom of the foot. These cases come on within a few months of the sprain in some instances, and in other cases some years after the sprain; and in a certain number of cases they can be relieved by the application of the felt pad or a valgus plate, or can be stretched but a certain amount of motion on the part of the joint by the hand or by the shoe of Schaffer. In any of these cases where the condition persists for years, one of these conditions should be found and relieved. If not, it has to be set down to the hysterical ankle, which is presumably due to disturbance of circulation.

There is one type of chronic sprain that it seems to me is exempt from the general rule Dr. Bradford and Dr. Conant spoke of. I see them at the out-patient department of the City Hospital -chronic sprains of the shoulder. Men and women come in with a disabled shoulder-joint, sometimes perfectly stiff, sometimes partly disabled. Wasting of the muscles is present, especially of the deltoid; and over the anterior surface of the capsule of the joint there is a tender spot. Motion on lifting the arm from the side is particularly painful. After having had a certain amount of experience in massaging those people gently and giving them passive motion, and contrasting that method with fixing the arm completely, I have been convinced that complete fixation of the arm at first is the shortest and best method of treatment. The joint is in most cases in a condition of irritability, and the dragging of the arm on the ligaments of the joint is painful, so that fixation of the arm by a sling, and keeping it fixed for two or three or four weeks, in nearly all instances has increased the motion rather than diminished it. The patients have been gradually allowed to resume or in the afternoon. If there is not found the use of the arm, and to have massage. In this way

it is analogous to the sprains of the finger that come massage on a joint in that condition. on, especially in women, between forty and fifty, where a sprain becomes steadily more painful; and there is apt to be thickening about the joint, which resists massage and behaves better when put in a splint and treated with counter-irritation and by massage later. Sprains in children, of course, are different, because in a certain number of instances in tuberculous children the swelling of the sprain merges directly into the tubercular swelling. This, In the Children's Hospital, we see in the knee and elbow, particularly where a comparatively slight injury leads to a sprain which does not clear up; the joint continues thickened, and it goes on into typical tuberculous synovitis of the joint.

Dr. P. C. KNAPP: I should like to add a little to what Dr. Lovett has said, especially about sprains of the shoulder-joint. We get in the nervous out-patient department at the City Hospital a very large number of cases of chronic joint trouble, especially a large number of cases of sprain of the shoulder-joint. In addition to the difficulty in lifting the arm from the side, the rotation of the arm outwards becomes extremely painful, the pain being referred chiefly to the point Dr. Lovett has mentioned. On going over a good many of those cases it is possible occasionally to pick out certain cases of a somewhat different type. A case came in this morning where there was distinctly nothing but the strain in the deltoid itself, no limitation of motion in the joint, but merely the pain in the insertion of the deltoid caused by extreme movements. There is another class which is also rare; a case where, following injury, there is simply a lesion of the axillary nerve and paralysis of the deltoid with degenerative atrophy, where the passive movement is not impaired. But the majority of these cases that come in from the surgical department are very protracted. They are usually referred for electricity, and I think in many of the cases galvanism through the joint helps somewhat, but certainly they are very slow. I shall be very glad if Dr. Lovett has found a method which gives better success than is generally obtained in the majority of cases that are referred to me from day to day.

Dr. Douglas Graham: I suppose that everybody knows what a sprain is, but very few could define it. I have searched the text-books in vain for a satisfactory definition of the word sprain, and finally constructed one for myself. My definition is that a sprain is a sudden, partial displacement of two joint surfaces, followed by immediate replacement. The attachments of the joint on one side are stretched beyond their natural limit, on the other side unduly compressed. If the patient has fallen from a height there will probably be contusion of the articular surfaces and soft tissues as well. Two years after this definition was published, the American Text-Book of Surgery thus described a sprain: "A temporary displacement, followed immediately by return to place, constitutes a sprain." Priority?

The method of treating sprains which Dr. Conant has described I have used for over twenty years, probably twice as long as he has; but I do not lay any claim to originality in this, though we may all use more or less tact and skill. The majority of sprained cases get away from me in seven or eight days. Some of these patients ask their physicians for massage, and are flatly told that it would be absurd to attempt to masser a joint that is so tender and painful; and in ing the bandage, and it is sufficiently stiff to afford the one sense the physician is right. But we do not begin | See Journal, March 31, 1881.

We first use gentle friction on the healthy tissues above the joint in the direction of the returning circulation, and gradually proceed towards the injured part. We do the same on the distal part of the limb, beyond the joint, for the circulation is hindered in both directions by reason of the swelling. After this we employ deep kneading in the same manner, first about on the sound tissues and gradually approach the joint. This has a more agreeably benumbing or analgesic effect than friction, and also some influence in pushing along the currents in the veins and lymphatics and thus making room for the effusion to get off. Proceeding in this manner for fifteen or twenty minutes, we can then make firm pressure over the effusion which by this time will probably be agreeable, and this spreads the effusion over more space and hastens its absorption. After this a tight bandage. Two séances of this kind daily, and the patient soon has the use of the sprained joint. Heat, pain and swelling rapidly disappear, and there are no bad after-effects, such as Dr. Bradford has described after other methods.

About ten years ago I published statistics of over 700 cases of sprains of all degrees of severity treated in this way by eight observers, and the average time of recovery was one-third of that under other methods. Some of these were my own cases. In general, the sooner after a sprain massage is begun, the sooner it gets well. For all that, however, we occasionally see an unusually severe sprain and contusion of a joint where a week or ten days of absolute rest seems better before massage is commenced. But even here massage may be used in such a way as to do no harm, if it does no good; and if one has brains in the ends of his fingers, an acquaintance with the behavior of joints, and a judgment of temperaments, he will probably arrive at a correct conclusion.

Dr. A. N. BLODGETT: I should like to call attention to a point which has not been alluded to this evening. I think it is an accepted fact that the vicinity of the lower leg and ankle is not an easy place for the ordinary practitioner to apply a smoothly fitting bandage, and that is a very common place for sprains of greater or less severity. In some cases of that character which I have seen,8 and among them a severe sprain which I myself received some years ago, I found very great relief, and since then marked success from the proper application of contractile collodion, immediately, or during the first few hours of the existence of the sprain. By bathing the part in hot water, a great deal of relief is sometimes obtained, but the ecchymosis and effusion is not relieved, the parts remaining somewhat inflamed, hot, and painful, and are filled with effused blood, and there is often a great degree of disability. Under these circumstances, after the bath, which may be quite prolonged, the application of contractile collodion is a means of applying a perfect bandage. It can be applied to almost any surface, and to almost any extent without the danger of overpressure in any part, or of cutting, or in any way injuring the external tissues. The extreme volatility of the ethereal portion of the collodion affords a sense of grateful coolness, and its contraction mechanically squeezes out a large part of the effusion. It is quite transparent, so that the condition of the parts beneath may be observed through the collodion without disturb-

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necessary support to the foot in the position in which it is placed, and to restrain overaction. In my own case I was able to walk on the second day, much in the manner Dr. Conant has described. The application of collodion is free from objection, as far as I know, and will accomplish in the early days of a sprain of severe character what I have not seen follow any other method of treatment.

DR. E. H. BRADFORD: The shoulder-joint affection to which Dr. Lovett has referred was described some years ago in a French thesis quite thoroughly, and was described anatomically and clinically as being really an inflammation of the bursæ. It seems there are a large number of bursæ around the shoulder-joint, particularly under the deltoid; and the cases which he alludes to were classified by this writer as being really inflammations of the bursæ rather than of the joint. Of course, that would necessitate rest during the inflammatory period, and then limited motion and massage with an inflamed bursa would not be justified; after the inflammation has passed, the use of the limb would improve the circulation, and I think under those circumstances the results are not altogether unsatisfactory where the cases can be treated. Of course, in the out-patient department of a large hospital the treatment cannot be very thoroughly carried out. The condition of the foot Dr. Lovett referred to I think is a different affection, or at least it may result from a sprain, but it seems it is due to an injury of the plantar fascia which has never been thoroughly treated. to the danger of a tubercular affection setting in in the sprains in children, in the cases where you analyze the history, the connection between the sprain and the injury is not sufficiently clear always to oblige us to treat sprains even in children by fixation. I intended to allude to the treatment by collodion. I have used it frequently. In regard to the statistics given by Dr. Graham as to twenty-seven days being the average time in treating sprains without massage, I may say I think that is an overstatement of the book-writers.

DR. A. COOLIDGE, JR., read a paper on

DEVIATIONS OF THE CARTILAGINOUS SEPTUM.4

DR. J. W. FARLOW: Many of these deviations are of a complicated nature; and the fact that so many different methods of treatment are advocated is proof enough that they are all more or less unsatisfactory. An occluded nostril is so narrow and dark that we are not always able to tell exactly what is best to be done. The free flow of blood during the operation obscures still further the field of vision. For simple ridges or deviations, with thickening, I should say that the saw was more frequently useful than any other method. If the septum is much bent but thin, I have been in the habit of making an incision down to the cartilage, stripping back the soft tissues and cutting out enough of the cartilage to diminish its size and elasticity and then pushing the septum over toward the other side. It is important to be careful and not perforate the membrane on the concave side. The trephine works well in cases of thickenings and ridges, but is apt to leave a ragged surface which is slow in healing. sigmoid-shaped deviation is often hard to remedy, because both nostrils are narrow and it is difficult to make the straightened septum stay in place. In the cases of old fractures or displacements, where the septum is bent way over to one side, it is often wisest to refract-4 See page 158 of the Journal.

ure it, push it to the median line, and use nasal plugs for several weeks.

One mode of treatment was not spoken of by Dr. Coolidge, and that was to push the bent septum over to the other side and fasten it there by a long stout pin passed through the septum in front of the deviation and made to emerge in the nostril behind the deflection. I have never tried this myself, and should not think it possessed many advantages.

The septum sometimes deviates so far forward, and is so long, that its free end is entirely in one nostril, and causes so much pressure on the overlying membrane as to cause cracks, fissures and even eczema. A number of dilated capillaries is also often seen. Even when the nostril is not much occluded, it is a disfigurement, and for esthetic reasons should be remedied. The skin affection and dilated vessels will not disappear until the septum has been shortened. It is very easy to remove the redundant cartilage by cutting the membrane over the projecting cartilage, pushing back the soft tissues, and with rongeur forceps, scissors, or knife trimming off enough of the cartilage so that the pressure and deformity are removed. Sometimes a stitch is useful, but generally the wound heals well if a little gauze is put in the nostril.

The attempt to correct deviations of the septum by directing the patient to push the cartilage over with the finger once or twice a day can be of no special benefit, for the cartilage is so elastic that it returns to its original position as soon as the pressure is removed.

Whatever method is used, the after-treatment is very essential and often very tedious.

Dr. Farlow showed a Chappel ring-knife for removing projections from the septum, also a Curtis rongeur forceps for cutting the septum.

Dr. T. A. DeBlois: In Dr. Coolidge's paper be mentions the pushing back of the mucous membrane in cases where he excises a portion of the cartilage. I have found that the best instrument for that is a little metal instrument made for cleaning the nails. With that you can push the membrane back very nicely. The trephine I am no friend of. I find it very difficult to use. I use a good deal a Goodwillie revolving knife. It cuts on the side, and is driven by the electric motor. You save a certain amount of mucous membrane. In the operation spoken of by Dr. Coolidge I always commence with the saw. Once or twice after excising the cartilage I have been able, by using short needles to suture the membrane back; but it is very tedious, and unless the hemorrhage is remarkably small in amount, it is almost impossible to do it. In cases of a double bowing, as in No. 1, a piece of cartilage can be dissected out very nicely.

DR. G. A. LELAND: I am very glad this subject has been brought up to-night and covered so thoroughly. I am glad it has been brought up, because by implication the making of a free passage in the nose by destruction of the soft parts has been condemned. The hard parts have almost no function; they are simply in the lower part of the nose, covered by ciliated epithelia, but they have not, like the middle and lower turbinates, the office of moistening and warming the air. It has occasionally been my opportunity to see cases in which the lower turbinate has been wholly or very largely removed in order to make room enough in the nostril. The condition of that patient afterwards, I apprehend, will be a great deal worse than before, when in after life dry catarrh shall take place,

as is certainly possible or even probable; and it would, in my opinion, have been a great deal better to have had the septum wholly removed than the turbinate itself. It has also been implied here that we should not remove too much of the surface of the septum. It is certainly a fact that a large amount of it can be removed, and the mucous membrane with its ciliated epithelia will be proliferated over the wound; but I have seen cases where a very large amount — in Case I, apparently the whole side — had been removed where the mucous membrane was not proliferated over the whole extent of the wound, and, therefore, crustiness and malodor of the breath resulted.

Almost if not quite as bad a condition is brought about by making a perforation through the cartilage in sawing off a spur or the elbow of a deflection. This is a result to be avoided, for it must be extremely unsurgical to make a hole through the cartilage where one was not intended by nature; and yet we see many cases where it has been done. Where the perforation is posterior to the junction of the vomer or cartilage with the ethmoid plate, it is not to be so much deprecated, because that is far enough back to be in the moist part of the nose. Whereas, if the perforation is made farther forward in the dryer part, then a most uncomfortable condition of affairs results, and crustiness with malodor of the breath must ensue. Therefore, in all these cases perforations through the septum ought to be avoided, as well as removal of too large a surface of the septum itself. It seems to me the spur, as in Case III, is nature's effort to repair a greenstick fracture. Nature is a mighty poor surgeon, although she may be a good physician. When she undertakes to put out the callus in the nose, when it is moist and warm, she oversteps herself. It seems to me in this case, she threw out too much spur, and the removal of that spur, provided the granulations were kept down, would restore the lumen. I forgot to mention one case where I perforated myself. It was the fault of the patient, who moved out of position, and I lost my direction. She was a sufferer from asthma for years; but she has had none since, upwards of two years.

The operation which I have adopted and mostly used, because of its quick performance and avoidance of bleeding, and of the very delicate manipulation which would be necessary in Case V, is one advocated by Adams and Steele, in which the resiliency of the cartilage is destroyed, the septum replaced, and then kept in place by hollow splints. It can be done under cocaine in simple cases, as well as general anesthesia. If the splints are properly adjusted, the patient does not have a great deal of trouble nor pain; but the precision and accuracy of the operation consists mostly in the perfect adaptation of the splints. If there is any pressure to amount to anything, they are uncomfortable to the patient. It is not always easy to get a splint to fit so as not to cause pressure, but in late years in most of my cases the patient has said that there was not any pain after he recovered from the

This is a subject of a great deal of interest because we find so many spurs and deflections. I am rather surprised to find a septum straight after seven years of

DR. J. P. CLARK: I have been very much interested in Dr. Coolidge's paper. There are one or two points I should like to emphasize. It seems to me in the experience of the reader, whether they heal important to save as much as possible of the mucous more readily.

membrane in operating on the nose. Of course, where one removes a spur with a saw, it is generally impossible to save any mucous membrane, but where there is a large bowing of the septum anteriorly with some thickening, dissecting off the mucous membrane and removing a piece of cartilage and putting the mucous membrane in place, gives a better result than removing any part of the prominence together with the mucous membrane. It is important to get the nose as clean as possible before the operation and keep it clean while the wound is healing. I always have the patient use some antiseptic solution twice a day as long as the wound is healing. I have a case in mind where there was a large ridge in one nostril with some nasal polypi and suppurating ethmoiditis. In order to remove the polypi it was necessary to remove the ridge and I removed it very thoroughly, and then I removed the polypi. A few weeks afterwards the prominence began to grow again, the cartilage to proliferate, and the condition of the nostril as far as the ridge was concerned was almost as bad as before; and it seemed to me this was due to a septic condition of the nostril from the discharge of pus from the ethmoid cells. Where the free edge of the triangular cartilage is deviated into one nostril, I think a very good method of operating, which I have used in several cases, is to bend the tip of the nose to one side, make an incision on the free edge of the cartilage, dissect back the mucous membrane, remove the cartilage as far back as it seems to be overpromineut in that nostril, and to replace the mucous membrane. It is unnecessary to use any stitch. A little gauze in the nose for twenty-four hours is sufficient to keep the flap in place.

Dr. F. C. Cobb: I have seen these operations of Dr. Coolidge's, and they have, as a rule, resulted very well. In doing them, the main difficulty, I have found, is that the mucous membrane on the wide side is apt to be adherent to the bend, and that is the point at which the perforation is liable to take place in dissecting it off with the probe. At this point it is sometimes difficult to free it, but after that is done the operation proceeds without trouble. In all operations with the trephine there is apt to be, in my experience, a longer period of healing and a larger callus than in those done with the saw. For a deviation of the kind which Dr. Coolidge describes, this operation has been more successful than any other I have seen done.

Dr. Coolidge: Dr. Farlow spoke of the difficulty of trephining. This is true of some cases, but in many it is not difficult. Every septum is different, the trephine is inferior to the saw in many of them; but with a septum which is simply bent, and where there is no spur a saw is of little use. I feel confident that I have seen cases in which the removal of a ridge from the convex angle of a deviation has resulted in a subsequent increase of the deviation. I have also noticed, as Dr. Cobb has said, that the mucous membrane is often very adherent along the acute angle of a sharp deviation.

Dr. F. L. JACK: Very often in deviations of the cartilaginous portions, as in Fig. 1, you will find little spots of ulceration on the concave surface, sometimes on the convex. I should like to ask what effect straightening of the cartilage has on these ulcerations

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Dr. Coolings: I have not noticed that ulceration is more common in a bowing than in a straight cartilage. This ulceration is generally situated anteriorly, in front of the point where obstruction occurs.

MAINE MEDICAL ASSOCIATION.

FORTY-SECOND ANNUAL MEETING, PORTLAND, JUNE 13, 14 AND 15, 1894.

THE Association met, as for many years, in the spacious chambers of the City Council, with an unusu- intestinal antisepsis.

ally large number present.

In the absence of the President, Dr. J. A. DONOVAN of Lewiston, Dr. A. E. BESSE, of Waterville, called the Association to order at 10.15 A. M. on Wednesday, the first day of the session, and proved himself a most admirable presiding officer.

Following the usual preliminary business, the. Treasurer's report was presented and read, showing a most prosperous condition of the treasury notwithstanding unusual drains upon it in trying to provide the people of Maine with a Medical Registration Law. A cash balance of \$1362.61 remains to the credit of the Association.

DR. GEORGE GOOGINS, of Millbridge, reported

A CASE OF PROFUSE VOMITING OF BLOOD DURING LABOR

by a patient previously healthy, followed by the birth of an exsanguinated child. Subsequent labors have been normal.

DR. JASON WALKER, of Minot, reported

A CASE OF PERSISTENT SCIATIC NEURALGIA

which was cured by deep hypodermatic injectious of morphia.

TYPHOID FEVER, WITH SOME NEW NOTIONS RE-GARDING ITS TREATMENT,

was the title of an interesting and practical paper by DR. EDWIN M. FULLER, of Bath.

The line of treatment adopted was called by the author "the alkaline plan," and was based upon the recognized necessity of combating bacterial infection and securing effective depletion. Alkalies were administered every two hours or oftener, and kept up at less frequent periods until convalescence was well established.

The treatment begins with a Seidlitz powder every two or four hours until good operations ensue, unless the bowels have been previously well moved; then a wineglassful of Dunbar's liquid magnesia every two hours until more than two operations are obtained during twenty-four hours; after this, either one half a wineglassful is given, or the same dose once in four

For irritable stomach, plain syphon soda is substituted, but is given regularly and persistently. The only water allowed is Apollinaris, and that in copious draughts. A hot bath by sponging is given every morning. If the temperature runs above 102°, this is repeated three to five times before eight P. M. Anti- pressure upon the nerve filaments of the os uteri. pyrin, in five-grain doses, is given at 7 and 9 P. M., and if the temperature be above 102°, another at 11 P. M. Vhiskey is given when indicated, substituting brandy,

Diet is absolutely liquid; milk when diluted is made so by Apollinaris, always cold.

Dr. A. K. P. MESERVE quoted the practice of forty years ago in York County to show that the alkaline treatment was not new. Until some true antiseptic which could be safely used was found, the best treatment would be largely expectant; good water, good nursing, good air and food, and the checking of hyperpyrexia.

Several gentlemen alluded to their use of alkaline remedies, and agreed that the complication by hemorrhage had been decidedly less since the introduction of

AFTERNOON SESSION.

Drs. J. E. GARLAND, of Gloucester, Mass., and T. S. HILLS, of Willimantic, Conn., were presented as delegates from their respective societies, and were invited to participate in the discussions of the meeting.

PRESIDENT'S ADDRESS.

In the absence of the President, Dr. J. A. DONOVAN, of Lewiston, who was in California, the address was read by his associate, Dr. John F. Hilton, of Lewiston. The title was, "Medical Hints, especially Addressed to the Younger Members of our Association." It was a happy presentation of the conclusions of a busy, practical man as to the elements which tend to bring success or disappointment to the young practitioner. It contained much sound advice and wise counsel.

Dr. B. B. Foster, of Portland, read a paper upon THE TREATMENT OF HEMORRHOIDS BY CLAMP AND CAUTERY.

The advantages urged were that time was saved to both patient and surgeon; little need of preparatory treatment; no need of antiseptics; little or no danger from hemorrhage; entire absence of pain; and no such unfortunate results as sometimes follow the cutting, ligating and injection methods.

Dr. S. C. GORDON said he had made repeatedly all the operations suggested for the cure of hemorrhoids and prolapse of the rectum, and had injected the last hemorrhoid he ever should, and the clamp and cautery offered the most satisfactory method of dealing with

these affections yet devised.

Dr. S. H. WEEKS, of Portland, preferred the ligature, and thought the unpleasant after-effects of pain and spasm might be avoided by care in the performance of the operation. When he used the cautery, he preferred burning off the whole mass, to cutting and then searing the stump.

DR. HENRY B. PALMER, of Phillips, read a paper

PUERPERAL ECLAMPSIA,

emphasizing the points that

Eclampsia is always the result of toxemia.

(2) That the toxic agent may be urea or creatine; in some cases some undetermined principle.

(3) That an explosion may be favored and intensified by emotional causes or by any peripheral irritation.

(4) That the most usual cause of an outbreak is

In treatment, veratrum viride, administered hypodermatically in doses of 0.33 to 0.65 c. c. of the fluid Thiskey is given when indicated, substituting brandy, extract, half-hourly until the pulse-rate is reduced wever, if the daily stools become more than three. to 60, was urged in place of venesection. Prompt and rapid evacuation of the uterus during chloroform FOUR PREGNANCIES IN A WOMAN WITH DOUBLE anesthesia was demanded.

In the ensuing discussion the general opinion inclined to prompt evacuation of the uterus, and hypodermatic injections of morphia, as the most efficient treatment.

EVENING SESSION.

Dr. W. B. SMALL, of Lewiston, read a paper upon THE ARTIFICIAL FEEDING OF INFANTS.

The writer preferred the formula of Dr. Rotch to any of the commercial foods, as approaching nearest to the human breast-milk.

Dr. W. L. Dana, of Portland, presented a paper upon

THE PRINCIPLES OF ANTISEPTIC SURGERY,

which was preliminary to a clinic on the following morning at the Maine General Hospital, illustrative of surgical dressings.

DR. S. H. WEEKS, of Portland, reported in detail a UNIQUE CASE OF URINARY CALCULI.

The patient had a history of long confinement in the recumbent position after gunshot injury to the thigh during the War of the Rebellion, followed by longcontinued suppuration. In 1891 he had an attack of pyelitis, from which he slowly recovered, until in the spring of 1892 two large, painless swellings suddenly appeared, one in the right groin, the other in the right thigh a few inches below the groin. Deep-seated fluctuation followed free poulticing, the abscess was opened, and discharged freely for several weeks. One morning, in dressing the wound, a small uric-acid calculus was found in the opening. Free incision was made into the swelling in the thigh, and the opening into the groin was enlarged; from each opening was removed a renal calculus the size of a cranberry bean. A year afterward another small stone came away. Since this occurrence the sinus has so far healed that the use of injections has been discontinued. No indications of urine in the discharge have ever been present, nor has there been any pain.

The unusual features of the case were the ulcerations through the renal tissue into the perinephritic tissue, the passage of the calculi down along the course of the psoas magnus muscle, and the closure of the opening in the pelvis of the kidney, which prevented a permanent urinary fistula.

Dr. D. A. Robinson, of Bangor, read a paper on THE CODE QUESTION FROM THE STANDPOINT OF THE GENERAL PRACTITIONER.

which at once set in progress an aminated discussion. The Association wisely declined to waste time upon serious consideration of a subject upon which it was evident few were prepared to commit themselves definitely, and referred the question of modifying the present code of ethics and By-Laws, to a special committee for report at the next annual meeting. The present code was criticised as containing much that is irrelevant, much that is utterly useless, and much that does not affect equally the individual physician, and his associates when organized as hospital staffs, with the same obligation. What the action of the Association may be upon the main question, it is not now possible to predict. The conservative element will doubtless prove to be in a majority.

DR. GEO. W. WAY, of Portland, reported a series of

UTERUS AND VAGINA.

with especial reference to the theory that the ovaries ovulate alternately, and that the egg from one produces males, from the other, females.

The argument was based upon correspondence in certain clinical facts during the second and third pregnancies, notably a gravitation of the uterine mass toward the right side, vomiting during the first three or four months, hard instrumental deliveries, and large male children. The third pregnancy was left-sided; no vomiting; short, easy labor; female child. An abortion at six weeks had preceded these pregnancies, having been accompanied by much nausea and vomiting, and the sac having been expelled after five days of severe pain. The fetus was said to be male. The vaginal septum was ruptured at the second confinement.

Dr. John F. Thompson, of Portland, said that because the uterus was double, the fetal body would not necessarily go on to complete development on one side of the abdomen, because the empty side would play no part at all. He was glad no attempt had been made to substantiate the theory enunciated.

SECOND DAY. - THURSDAY.

Dr. W. P. Giddings, of Gardiner, read a paper on THE SURGICAL DEMANDS OF A COUNTRY PRACTICE.1

The report of the visitors to the Maine Insane Hospital, was presented and read, and again, as it has for so many years, urged upon members of the Association the necessity of using their influence with members of the legislature to secure the passage of an appropriation which will ensure the erection of the new hospital at Bangor, and relieve the overcrowded condition of that at Augusta. The staff of the present institution has for several years been laboring under great disadvantages, being obliged to care for from two hundred to three hundred more patients than there are adequate provision for. During the past year the whole number of patients and attendants has been nearly one thousand; and patients have slept in corridors, and wards have been crowded, all because politics have dominated the situation. Added to this condition of things, two years ago diphtheria gained an entrance; and in spite of the best sanitary management, with the most improved appliances, has persisted, now and then attacking patients and nurses. It would seem that humanity would demand the suppression of sectional squables, and allow some agreement in carrying out the provision made several years ago for the erection of another hospital, for which land was purchased and plans drawn and accepted. Thus far the repeated remonstrances of the medical profession have been unheeded; and there exists a condition of affairs which disgraces the State.

At 11 o'clock the Association adjourned, by invitation, to the amphitheatre of the Maine General Hospital, where, under the direction of the surgeons on duty, a large variety of antiseptic surgical dressings was exhibited, and various modern methods of sterilization of dressings, instruments and wounds were illustrated.

AFTERNOON SESSION.

The annual election of officers resulted as follows: President, Dr. W. P. Giddings, Gardiner. First

1 See page 131 of the Journal.



Vice-President, Dr. A. G. Young, Augusta. Second Vice-President, Dr. C. D. Hill, Bethel. Corresponding Secretary, Dr. J. E. Walker, Thomaston. Board above the pubes apparently from exudate. The last of Censors: Drs. C. A. Ring, Portland; F. J. Robinson, Fairfield; Jas. S. Sturtevant, Dixfield; F. B. Ferguson, Deer Isle; J. O. McCorrison, North Berwick. Committee on Publication: Drs. C. D. Smith, Portland; W. L. Dana, Portland; W. B. Small, Lewiston; A. F. Murch, Westbrook; Alfred Hitchcock, Farmington. Business Committee: Drs. W. B. Moulton, Portland; Addison S. Thayer, Portland.

The Treasurer, Dr. Aug. S. Thayer, and the Recording Secretary, Dr. C. D. Smith, both of Portland, are

permanent officers.

DR. F. H. GERRISH, of Portland, introduced a resolution, which was unaminously adopted, urging upon our senators and representatives in Congress the necessity of trying to secure an increase in the sum appropriated by Congress for the support of the Library of the Surgeon-General's Office at Washington, to the original amount of \$10,000.

DR. JAS. B. O'NEIL, of Portland, reported in detail

A SUCCESSFUL CASE OF SYMPHYSEOTOMY,

the first in this State.

The patient had passed through three severe instrumental deliveries, with dead children, as the result of a justo-minor pelvis, the measurements by pelvimetry being as follows:

_				Normal.
Between spines			81 inches.	101 inches.
Between crests			94	114 "
External conjugate			6 1 "	8 "
True coningate			9≜	

Recovery has been perfect, with an immoveable joint and a living, healthy child.

PROF. F. C. ROBINSON, Professor of Chemistry in Bowdoin, read a paper on

THE CHEMISTRY OF DECOMPOSITION.

The paper was a description of the formation of ptomaines, and their relation to micro-organisms. The writer emphasized the close resemblance between some of the members of this group, and certain vegetable alkaloids, so intimate in their physiological action as to greatly obscure diagnosis in certain cases of poisoning.

DR. S. C. GORDON, of Portland, reported two interesting

CASES OF ABDOMINAL SECTION.

One was Cæsarean section upon a woman at full term, rapidly wearing out from the drain of a uterine epithelioma. The time of delivery was just seven minutes from the first incision into the abdominal wall until the child was in the hands of his assistant.

Placental delivery was easily accomplished, and uterine contractions were good; the wound was closed by buried sutures through the muscular part of the wall, and the peritoneal portions were brought together edge to edge. The external wound was closed by catgut and silkworm-gut. Death occurred in fifty-six hours, from septic peritonitis. He did not regard this case as a fair test because the uterus was in a septic condition before operation.

The other case was one of extra-uterine pregnancy of the abdominal type. The symptoms had been those T. Moulton, Cumberland Centre. of general peritonitis following the pain and hemorrhage characteristic of tubal pregnancy terminated

and as soon as the patient could be moved, she was taken to a hospital. There was a conspicuous tumor menstruation had been in December, about five months

Abdominal incision brought to light a mass of exudate as large as one's two fists, which contained a fetus of five months, which was living when delivered. The pregnancy had been originally tubal; at the end of seven weeks, as the history of the case now shows, the tube had ruptured, and development had gone on in the abdominal cavity. At this operation not only the sac but ovaries and tubes were removed, and the patient made an excellent recovery.

DR. W. K. OAKES, of Auburn, reported

A SERIES OF TWENTY CASES OF ABDOMINAL SECTION, with special reference to their bearing upon the statistics of these operations.

EVENING SESSION.

This was devoted to the Annual Oration, by Dr. HENRY H. SMITH, of Machias, upon the subject of

THE RELATION OF THE INDIVIDUAL PRACTITIONER TO SANITATION AND PREVENTIVE MEDICINE.

The address outlined the wide sphere of usefulness which lay open to the physician in improving the opportunities offered in his private relations with his patients for promoting the public welfare through preventive medicine.

CLOSING SESSION. -- FRIDAY.

The closing session was held on Friday morning, and besides the usual business, little was done except to receive and adopt the report of the Board of Censors, which is as follows:

The next annual meeting will be held in Portland on the first Wednesday, Thursday and Friday in June,

The following appointments were made: Orator, Dr. A. K. P. Meserve, Portland. Visitors to Maine Insane Hospital: Drs. C. A. Ring, Portland; C. D. Hill, Bethel; E. M. Fuller, Bath. Visitors to Portland School for Medical Instruction: Drs. C. W. Pillsbury, Saco; C. W. Price, Richmond. Visitor to Medical School of Maine (two years): Dr. A. E. Besse, Waterville. Necrologist, Dr. Chas. D. Smith, Portland.

Delegates to other medical societies — American Medical Association: Drs. T. A. Foster, Portland; Geo. B. Swasey, Portland, C. W. Foster, Woodford. Vermont: Drs. J. B. O'Neil, Portland; J. F. Hilton, Lewiston. Massachusetts: Drs. Chas. Hutchinson, Chas. D. Smith, Portland. Rhode Island: Drs. E. A. McCollister, Gray; I. D. Harper, North Gorham. Connecticut: Drs. F. B. Adams, Rockland; Geo. A. Coombs, Waldoboro. New York: Drs. S. P. Warren, Portland; E. A. Porter, Liberty; G. M. Woodcock, Bangor. New Brunswick: Drs. H. H. Smith, Machias; C. J. Milliken, Cherryfield.

The Necrologist reported the deaths of Drs. E. Edgecomb, Great Falls, N. H.; Hampton E. Hill, Saco; Isaac E. Hobart, Milford, Mass.; D. L. Lamson, Fryeburg; D. E. Marston, Monmouth; and Charles

As a whole, the session was unusually successful. Twenty-two new members were added, and the attendy a ruptured sac. Partial recovery had followed, ance exceeded that of any meeting for several years.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, AUGUST 16, 1894.

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THE SANITARY DISPOSAL OF THE GARBAGE AND REFUSE OF CITIES.

WITHIN the past ten years or more public attention has been aroused to the necessity of better methods of disposing of the offal, garbage and refuse of cities than those which had hitherto existed. In inland cities especially, the collection and final disposal of the putrescible material resulting from the waste of hotels, restaurants, boarding-houses and private families has proved a serious question to local boards of health until radical measures were adopted to remedy the evil. The ancient swill-cart, with its leaky contents travelling slowly through inhabited streets proved to be a nuisance, which the authorities were often importuned to abate. No less objectionable was the feeding of such material to domestic animals. In Massachusetts a statute was enacted in 1889, prohibiting the feeding of such garbage to milch-cows, but no bar was imposed upon its use as food for swine, notwithstanding the fact that investigations of the State Board of Health upon several thousand hogs fed upon the offal produced by the City of Boston showed that 18 per cent. of these animals, when slaughtered for use as food, proved to be infected with trichine. Epidemics of this disease occurred in the State in 1892, resulting in the loss of several human lives.

In seaboard cities a partial remedy had been effected by towing the material out to sea and leaving it to be disposed of at a distant point from the shore. Objections have been made to this method, in consequence of the nuisance caused by floating material driven ashore by easterly gales, and by the difficulty of such disposal in rough weather.

To remedy these evils, the plan of burning, or otherwise treating the garbage at a central collecting station has been adopted in several cities in this country—at Milwaukee, Buffalo, Providence, Detroit, St. Paul, Chicago, Lowell and other places. The processes employed may practically be divided into two classes, de-

struction or cremation by fire, and rendering or treating the material in such manner as to utilize a portion of it. In one of these processes, for example, the fat is extracted for use in making soap and candles, while a portion of the remainder is converted into fertilizers.

England has the reputation of being the country where the practice of cremating garbage originated, or, at least, where it has been most thoroughly accomplished; and at the present time about fifty English cities and towns are now supplied with destructors of some sort or other. The first was built at Manchester in 1878.

A summary of the operations of these establishments has just been published by Mr. Charles Jones, of Ealing, near London, which gives many facts which are worthy of note. Mr. Jones obtained his facts mainly by means of circulars addressed to the authorities of many English cities and towns, and from the replies to these circulars valuable information may be obtained.

Omitting some of the technical details, we find that 46 English cities were supplied with 51 establishments for treating offal, garbage, refuse, etc. The area of the districts from which collections were made, varied from 406 acres in the densely settled district of Whitechapel, London, to 21,572 acres at Leeds. The largest population supplied by a single plant was that of Liverpool.

In the case of 33 towns all of the house refuse is burned; in the remaining towns a part is burned and a portion otherwise disposed of; in Liverpool, a part is towed out to sea.

The quantity of material collected varied from 10 loads per day in a town of 10,000 inhabitants to 699 loads per day at Birmingham.

The cost of collection, exclusive of interest in the plant, varied from 11 pence per load at Southampton to four shillings sixpence per load at Battersea (one of the London establishments).

The materials treated in these destructors differ according to the circumstances and conditions prevailing in the cities where they are located. The following summary presents the average composition of the refuse collected at Paddington (a district of London) as stated by Professor Forbes:

		11	E	VERY	10,0	00 T	ONB.			
										Tons
Ashes .		•		•		•		•		5,260
Breeze or o	sind	ers								2,880
Animal and	d ve	geta	ble	refus	0					1,420
Pottery, et	c.	•								290
Coal .										15
Bones .										25
Rage .										42
Iron .										35
Brass and	pe w	ter	,							3
White glas	8 .									7
Black glass	,									23
									1	10,000

The annual amount per inhabitant was 3.6 cwt. The foregoing represents a fair average composition

Refuse Destructors, with Results up to the Present Time. By Charles Jones, M. Inst. C. E. Biggs & Co., 139 Salisbury Court, London. 1894. of the ash- and dust-bin refuse of a city in which waterclosets are employed. It is not strictly comparable with the material treated in most American cities using destructors, in consequence of the absence of ashes in the latter, this form of refuse in America usually being separated and used for filling of waste and low lands. The dust-bins of the London streets, almost unknown in most American cities, receive the street sweepings and horse-droppings.

In some localities great pains are taken to separate all portions of the refuse which can be made available from an economical point of view. The New Refuse Disposal Company at Chelsea on the Thames, provides for the sorting of refuse by machinery. Each load is dumped into a revolving screen, and the cinders and fine coal are separated for fuel, the paper and rags are made into wrapping paper on the premises, bones, glass and iron are separated and sold. The organic material is ground up with the fine dust and converted into fertilizers, and the whole process is conducted without offense to the neighborhood.

In addition to these materials, at Birmingham and at Leeds, the pail system is in use for a considerable portion of the population instead of water-closets, and the contents of these pails are collected at intervals and treated at the same establishment with the garbage and ashes; and again, at Ealing, where the town is supplied with a good system of sewers, the sewage is treated by chemical precipitation, and the resulting sludge is burned in the destructor with the garbage.

Another economic point is the utilization of the resulting cinders or ash produced by the process of burning. This ash can be converted into a cement of good quality, as is done at Birmingham, where stables, and houses for the workmen, were shown to the writer, the walls of which were constructed of this cement. It also makes a very good material for roads and sidewalks.

One of the most important sanitary questions in Mr. Jones's circular, and one which is at present exciting much interest in this country, is that of possible nuisance or annoyance to the surrounding neighborhood in consequence of foul odors from the smoke and gases of combustion. The question was put in the following form: "Have complaints ever been made as to smell from chimney or otherwise?"

To this question 27 authorities answered with an unqualified "No;" and in several of the remaining instances it was stated there had been no complaints after "Fume Cremators" had been intoduced to destroy foul odors before the smoke and gases were admitted to the chimney stack. In most instances the chimney is quite high, averaging about 175 feet above the ground.

It appears to be quite practicable, judging from the results of these inquiries, to conduct such processes, even in crowded localities, without giving annoyance to the surrounding neighborhood. The establishments in London, in Birmingham and in Leicester are in the most densely settled districts. One of the numerous

plates and diagrams with which Mr. Jones's book is illustrated, shows the establishment at Leicester in close proximity to dwelling-houses and a large public schoolhouse.

DIGITALIS IN PNEUMONIA.

Petresco 1 speaks most enthusiastically of the value of large doses of digitalis in the treatment of pueumonia. Four to eight grammes are administered daily in the form of an infusion, with 200 grammes of water and 40 of syrup, a tablespoonful being given every half-hour. He has thus treated 755 cases, with a mortality-rate of 1.22 per cent. The temperature usually falls after such doses from 40-41° to 36-35°, and the pulse from 120-130 to 37-30 or even lower, in one case sinking to 24. The crepitant râle and bronchial respiration disappeared, leaving the lung perfectly clear, while the general condition kept pace with the improvement in the physical signs prostration, coma and asphyxiation giving place to mental clearness and a sensation of well-being. All the patients felt in a condition of perfect health twenty-four hours after the complete jugulation of the disease, which usually was brought about at the end of three days. A correspondence could be noticed between the gravity of the disease and the amount of the drug borne; the more serious the condition of the patient, the larger the dose which could be tolerated. The same treatment was employed in infectious pneumonia of a typhoidal character, but some antiseptic was given in addition. None of the cases exhibited the classical symptoms of digitalis-poisoning.

He draws the following conclusions:

Pneumonia can be jugulated by digitalis in large doses given from the beginning of the disease. This abortive treatment is the most rational, as it is based on the pathogenic indications of pneumonia, while its efficacy is proved by statistics, the lowest mortality being found among patients treated in this way.

Four to eight grammes a day of the leaves in infusion is the true therapeutic dose in adults, and from this dose only can we expect immediate salutary effects.

Toleration and non-toxicity of this dose are incontestably proved by the number of 755 observations.

Fickl² is hardly less enthusiastic from his experience with 108 recruits, of whom 74 had croupous and 34 lobular pneumenia. One only, a case of frank lobar pneumonia, died. He quotes Hoepfel of Bärnau as having treated 15 cases, with one death. He used a somewhat smaller dose than Petresco, and also gave alcoholic stimulants pretty freely. The course of the disease in his cases was not markedly shortened, nor was the fever rapidly reduced, but fell one-half to one degree after a day or two, and then gradually sank from day to day, finally dropping suddenly to normal or subnormal, its termination taking place more fre-

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Bull. de Thérap , vol. cxxii, p. 120.
 Wien, med. Woch., xliii, H. 8 and 9.

quently by lysis than by crisis. Convalescence was not protracted beyond the usual time.

Strizover * reports nine consecutive cases treated by this method. On the day following the beginning of treatment the temperature dropped from 40° C. to 38°, and the subjective state markedly improved. In cases in the incipient stage the lungs became free from abnormal signs in a day or two, while in those more advanced complete resolution occurred about the seventh day.

These remarkable results have not, however, passed unchallenged. Löwenthal reports 12 cases in the Vienna Hospital, all of whom recovered; but the depression and exhaustion rather increased under treatment than diminished, while stupor and other cerebral symptoms were not influenced. The turgidity of the face disappeared and was replaced by pallor with cold extremities, while the cough and sputum remained as before. No alteration in the course of the disease could be detected by physical examination, previously intact lobes in two cases being affected after the patients were thoroughly under the influence of the drug. The course of the fever was but slightly influenced, but after the temperature fell it remained subnormal for several days. Before the crisis, the frequency of the pulse was only slightly affected; but after it, it fell decidedly, and often became very irregular, and remained so for two or three weeks. The blood-pressure also remained below normal. In three cases the slow pulse was followed by a rapid one, which was thready, irregular and intermittent. Resolution was not prolonged, but owing to the weakness of the patient, expectoration was less easy. Convalescence seemed lengthened, the picture being that of a marked and rather prolonged collapse.

Renier's 5 experience in 24 cases is very similar to that of Löwenthal. Although but one death occurred, a woman sixty-nine years of age, who was admitted in a state of collapse, he was unable to see that the drug had any influence upon the disease, except, perhaps, in the way of prolonging resolution, while symptoms of intoxication occurred ten times.

We have here a record of 923 cases, of whom but The value of the statistics is, however, somewhat lessened when the sources from which they are derived is considered, the larger series being drawn from a selected class of patients, young and presumably healthy men serving out their term of military duty, in whom a low mortality is to be expected, while the others are made up of so few cases that the small death-rate might be an accidental coincidence, and result from any form of treatment. Although Petresco and Strizover claim to have met with no cases of poisoning, it has been comparatively frequent in the experience of the other reporters; and occasionally the symptoms have been very serious, Renier reporting a case in which after digitalis had been given in doses of four grammes for three days, alarming symptoms of

collapse lasting for six days came on, consisting of cyanosis, sunken face, vomiting, small and intermittent pulse, cold sweat, uninterrupted hiccough and stupor. Even if recovery followed in all such cases, the occurrence of collapse as the result of treatment, whose special object is its prevention, should act as a warning against the use of these large amounts of digitalis in pneumonia as a matter of routine; but, as Löwenthal says, "in cases in which it is indicated, but where no result is produced by ordinary doses, the administration of a single large dose, three or four grammes in infusion, produces at times extraordinarily good results."

MEDICAL NOTES.

THE CHOLERA. — The cholera shows a little tendency to diminish in St. Petersburg. During the week ending August 4th there were 313 new cases and 240 deaths, while in the week ending August 11th there were only 156 new cases and 101 deaths. In Warsaw, for the same two weeks, there were nearly 700 new cases and 400 deaths. These figures are of reported and officially recognized cases, and are said to be much under the real number. In Amsterdam there have been one or two new cases each day, while at Maestricht there have been four or five. Some six or seven cities in Holland have now reported single

SMALL-POX AT NEWARK, N. J. - Five cases of small-pox were discovered in a tenement-house in Newark, N. J., last week; and it is thought that others will occur, as these patients had been ill for some time before reported.

THE AMERICAN PHARMACEUTICAL ASSOCIATION. -The annual meeting of the American Pharmaceutical Association will be held at Asheville, N. C., on September 3, 1894.

BEQUESTS TO HOSPITALS. — The will of Elizabeth H. Pleasanton of Philadelphia makes the following bequests to medical charities: The Philadelphia Home for Incurables ten thousand dollars, the Presbyterian Hospital twenty-five thousand dollars. The will also contains provisions for the payment of a contingent bequest of a further income to the same two hospitals.

AMERICAN VISITORS AT THE MEETING OF THE BRITISH MEDICAL ASSOCIATION. - Among the foreign visitors at the annual meeting of the British Medical Association in Bristol were Professor Osler, of Baltimore; Dr. de Schweinitz, Dr. Riseley and Dr. George M. Gould, of Philadelphia. Dr. Unna and Dr. Voigt, of Hamburg, Dr. Landolt, of Paris, and Dr. Snellen, of Utrecht were also guests of the Association.

A NEW MEDICAL JOURNAL .- Not only do certain organs of the body have their special medical journals, but now comes the first of a series devoted to a single disease. A new quarterly journal devoted to the study of tuberculosis has just been issued at Madrid. Its title is La Revista de Tisiologia, and it is edited by Dr. Valenzuela.

Epitome, British Medical Journal, December 24, 1891. Controls, f. d. gesam. Therap., November, 1891. Wien. med. Woch., 1893, H. 39.

A CHAIR OF EMBRYOGENY. — Dr. Bornand, the eminent Swiss consultant lately deceased at Berne, bequeathed his property to the Académie de Lausanne for the endowment of a chair of Embryogeny.

NOTIFICATION OF DISEASE IN LISBON. - The Portuguese government has ordered that there shall hereafter be reported to the board of health on the first Monday of each week, every case of the following diseases which has occurred in the previous seven days in any school, hospital or asylum of the city: plague, cholera and choleraic disease, yellow fever, miliary fever, cerebro-spinal meningitis, small-pox, whoopingcough, measles, scarlet fever, diphtheria, influenza, puerperal fever, dysentery, green diarrhea of infants and purulent ophthalmia. In addition to these diseases, in private practice physicians must report each case of tuberculosis. The relative importance of reporting chronic tuberculosis at all, and typhus, cholera or diphtheria within a week only, is worthy of an efficient board of health!

THE PENNSYLVANIA HOSPITAL FOR THE INSANE. - The report of the Department for the Insane of the Pennsylvania Hospital for the year just ended shows a total of 622 patients treated during the year, a daily average of 438. Since the hospital was opened in 1841 there have been 10 078 patients under treatment. The report says: "Thus far there has been no unusual demand upon our accommodation. Of those admitted, but a small number of cases can be traced to business reverses. The diffusion of knowledge, and a high standard of public and social morality, prove a wholesome safeguard against the effects of business calamities, and can be depended on to fortify a community to endure with patience and courage all the mutations of human affairs. It is, however, probable that there will be an unusual demand upon the accommodations of the public hospitals for the insane. Prolonged strain and worry from loss of employment, and lack of means to procure the actual necessaries of life, must inevitably result in a depression of the vital forces and nervous system. Epidemic conditions that affect the public health, such as the prevalent influenza of recent years, have been noticed to be followed by an increase of insanity. While the prevalent business depression has not produced any perceptible increase of insanity, there can be little doubt that the secondary effects are yet to be felt and will be observed in the hospital statistics of the country in the future."

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the week ending at noon, August 15, 1894, there were reported to the Board of Health of Boston, the following numbers of cases of acute infectious disease: diphtheria 39, scarlet fever 29, measles 8, typhoid fever 21.

ONE HUNDRED YEARS OLD. — Mrs. Sally Batchel"--, of Peabody, Mass., was one hundred years old on
set 8th. She is in excellent health, but for imeyesight.

THE FIRST ANNUAL REPORT OF THE BEVERLY, MASS., HOSPITAL. — The annual report of the directors of the Beverly Hospital shows that during the first official year of its existence ending May 1, 1894, there have been ninety patients under treatment, of whom forty-six were discharged cured, twenty-five relieved, four not relieved and ten dead. The total receipts of the hospital were \$8980.94 and the total expenditure \$6266.70.

A Decision on Sanitary Defects. — The Supreme Court of Massachusetts in a decision of the full bench, has ruled that a landlord is not legally bound to inform his tenants at will of sanitary defects in the drain of the house. Neither is he liable to the tenant at will in a suit for damages for negligence in not acquainting such tenant of defects in the drain which arose during the course of the tenancy, even where the condition of the drain caused one of the occupants to take typhoid fever and die.

NEW YORK.

Dr. Judson B. Andrews. — The history of the career of the late Dr. Judson B. Andrews, whose death was announced in the JOURNAL of August 9th, is that of a life of great usefulness and high honor begun under very discouraging circumstances. Dr. Andrews's father was of the humblest origin, and for many years was employed as a college "sweep" at Yale. He was, however, a man of frugal habits and strict integrity, and his ambition in life was that his son should attain to higher things. In this he was joined by his worthy wife, who contributed to the maintenance of the family by taking boarders. Accordingly, young Andrews was educated at the best schools, and in due time was graduated from Yale College with honors. After he had completed his medical course, he became interested in the study of mental disease, and for many years he served as assistant physician under the late distinguished Dr. John P. Gray, at the State Hospital for the Insane at Utica. A few years ago he was appointed superintendent of the State Hospital at Buffalo, a position he held at the time of his death, and in 1892 he was honored (as Dr. Gray had previously been) with the presidency of the New York State Medical Association.

DIPHTHERIA BACILLI IN CHEESE. - The discovery of diphtheria bacilli in a lot of cheese (the first instance of the kind yet recorded, as far as known), lately sent to the city from a dairy at Afton, N. Y., has attracted unusual attention in the medical profession. It seems that in the early part of July there was a number of cases of diphtheria in the town of Afton, and among those attacked by the disease was the child of the proprietor of the dairy mentioned, and one of the employés of the cheese factory belonging to it. In the latter instance the affection was of a very malignant character, and the patient died. Under these circumstances the factory was closed by the local Board of Health, and instructions asked from the State Board of Health. Dr. F. C. Curtis of the State Board then came to Afton, and, after investigating

the condition of affairs, gave permission to ship the most men would prefer even a short life of work, well June cheese from the dairy, but ordered the July cheese held for further examination. He then requested that samples of the latter should be sent to Prof. J. H. Stoller, of Union College, Schenectady, for bacteriological tests, and instructed the Afton Board of Health to allow the cheese to be shipped on July 30th, if not advised to the contrary. On July 30th, accordingly, no word having been received from Dr. Curtis, the cheese was shipped to a firm of commission merchants in New York City. The next day, July 31st, a letter came from Dr. Curtis, stating that diphtheria bacilli had been found in the samples examined by Professor Stoller, and the Board of Health then telegraphed the New York Board to seize the cheese sent on the previous day. This was accordingly done, and the tests which have since been made by Mr. A. L. Beebe, Acting Chief of the Bacteriological Bureau of the City Health Department, have amply confirmed those of Professor Stoller, and demonstrated beyond question the presence of the Klebs-Löffler bacillus in the cheese. Guinea-pigs have also been inoculated with cultures derived from the cheese, but the results of the latter investigations have not yet been announced.

Miscellanp.

THE INFLUENCE OF POLITICS ON PULMO-NARY THERAPEUTICS.

THE most suitable treatment for pulmonary anthracosis has always been considered to be removal from the conditions of vitiated air to better hygienic and aerial surroundings, but there seems to be now an opposition to such treatment, on the part of M. Dr. Vigné d'Octon, a member of the French House of Deputies.

The government having offered to employ the miners of Graissessar, who are out of work, in the coal-yards of the railroad at l'Aveyron, Dr. Vigné d'Octon says the miners should refuse such an offer for the following reasons: "Since adult age, and in some cases from childhood, the miners whom you would send to the railroad yards at Rodez have worked in the mines, that is, in a peculiar atmosphere which has gradually brought about profound changes in their organs. Their lungs, for example, are affected with anthracosis, due to the accumulation in the parenchyma of a considerable amount of carbon dust. The result of this condition is that they cannot carry on their functions without danger in a too fresh atmosphere or one too different from that of the mines. And these miners you propose to transport brutally to the mountains of Rouergue to an altitude of seven hundred metres, to a climate so vigorous that the winters test the most robust. I appeal to all physicians, members of Parliament, and ask them if as physicians they would sanction the decision they have approved as politicians."

Inasmuch as the miners are out of employment and in need of the means to procure food, it seems a refinement of therapeutic interest to starve the men to death for the sake of providing them with a sufficiently carbonized air to breathe; and there is small doubt that, whatever be the value of Dr. d'Octon's opinion,

fed, on a mountain seven hundred metres high to a prolonged idleness of hunger in the most carefully adjusted atmosphere that a coal mine could provide.

Correspondence.

LETTER FROM KOREA.

CHEMULPO, KOREA, May 25, 1894.

MR. EDITOR: — This city is well situated for good hygienic conditions; but the habits of Chinese and natives of Chosen are quite able to counteract the advantages given by nature. The slow, but steady infiltration of Anglo-Saxon ideas of cleanliness may work a change. The great rise and fall of tides (thirty feet being the extreme) aid the hilly shore to afford drainage, while the clear sea-air blows

much bad gas away.
Under the auspices of the Episcopal Mission, Dr. Landis (Emir of Peina) has erected a hospital of ten rooms, Korean fashion — small, square compartments, warmed from fireplaces beneath the floor. Devoting himself to the study of the language and to his professional work, he is enabled to win their confidence, and thus have opportunity to let them see the light of truth that is to free them from the present ignorance and its many evils both physical and

mental. He reports many instances of myetalspia.

The Korean, Japanese, and Chinese communities are distinct from each other, but coterminous. The few foreigners are here and there, according to convenience of business or the desirability of location.

The carved and colored images on ends of posts or stakes remind one of the "totem" Poles of Alaska, as well as of the "masks" of Japan and of the American and Mexican tribes of Indians.

The sound of Korean words is similar to those given by children of Alents at Unalaska - perhaps another instance going to show the provenance of the Alaskans and North American Indians. The system of mensural notation in Korean is much like that used by the Iroquois. The reverence accorded the sun recalls the worship of the same object by the Zuñi, and other peoples of the western hemisphere.

Mr. James Scott, M.A., British Consul, is preparing a revised edition of his "Korean Language Manual," probably the best English work for those who wish to obtain a practical knowledge of this tongue. It is also used by the people of Chosen (the name liked by the natives) to learn English. This second edition will be issued in about six months. It contains elements of pronunication, grammar, and phrases for illustration and practice in speaking, reading and writing. The introduction gives the latest results of research on the linguistic cognation of the written and the spoken forms — different from Chinese and from Japanese. The Chinese language and literature bear very much the same relation to Korean and Japanese that Greek and Latin do to English.

F. B. STEPHENSON, M.D., Surgeon U. S. N.

SHORTHAND IN MEDICINE.

Oxford, England, July 31, 1894.

Mr. Editor: — In order to promote the use of shorthand in medicine, it is desirable that a list should be compiled of all those who use it. We would, therefore, ask each practitioner and student, who is acquainted with phonetic shorthand to send his name and address to Dr. Neil, Warneford Asylum, Oxford, England.

The preparation of a list of medical phonographers is intended as a preliminary step to such farther measures for mutual encouragement and help as may appear advisable.

Yours faithfully, W. R. Gowers, M.D., F.R.C.P. EDWARD B. GRAY, M.D. JAMES NEIL, M.D.

METEOROLOGICAL RECORD.

For the week ending August 4th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:-

Baro- Thermom- meter eter.		Relative humidity.			OI W	rind.	OI W	ind.		Inches.			
Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 Р. М.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 ▲. Ж.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Rainfall in in
29. 94 30.00	78 77	94 88 85	75 68 69	54	52 68	60 61	W. W.	S.E. W. W.	10 9 6	5 7 11	F. F.	Ŏ.	0.04
30.01 29.84	70 73	77 ; 80	62 66	90 95	81 82	86 88	E. S.E.	S.W.	11 4 5	11 10 11	O. B. R.	0. 0.	0.11 0.04
	29.89 29.94 30.00 30.04 30.01 29.84	29.89 84 29.94 78 30.00 77 30.04 68 30.01 70	29.89 84 94 29.94 78 88 30.00 77 85 30.04 68 72 30.01 70 77 29.84 73 80	29.89 84 94 75 29.94 78 88 68 30.00 77 75 69 30.04 68 72 73 30.01 70 77 62 29.84 73 80 66	29.89 84 94 75 72 29.94 78 88 64 69, 30.00 77 85 69 54 30.04 68 72 63 54 30.01 70 77 62 90 29.84 73 80 66 96	29.89 84 94 75 72 66 69 52 68 69 52 69 69 69 69 69 69 69 6	29.89 84 94 75 72 66 69 29.94 78 88 64 69 52 60 30.00 77 85 69 54 68 61 30.04 68 72 63 54 64 61 30.01 70 77 62 90 81 86 29.84 73 80 66 95 82 88	29.89 84 94 75 72 66 69 S.W. 29.94 78 88 68 69 52 60 W. 30.00 77 85 69 54 68 61 W. 30.04 68 72 73 55 64 61 N.E. 30.01 70 77 62 90 81 86 E. 29.84 73 80 66 95 82 88 S.E.	29.89 84 94 75 72 66 69 S.W. S.E. 29.94 78 88 68 69 52 60 W. W. 30.00 77 85 69 54 68 61 W. W. 30.04 68 72 63 55 64 61 N.E. S.E. 30.01 70 77 62 90 81 86 E. S. 29.84 73 80 66 95 82 88 S.E. S.W.	29.89 84 94 75 72 66 69 S.W. S.E. 10 29.94 78 88 68 69 52 60 W. W. 9 30.00 77 85 69 54 68 61 W. W. 6 30.04 68 72 73 56 64 61 N.E. S.E. 10 30.01 70 77 62 90 81 86 E. S. 11 29.84 73 80 66 96 82 88 S.E. S.W. 4	29.89 84 94 75 72 66 69 S.W. S.E. 10 5 29.94 78 88 68 69 52 60 W. W. 9 7 30.00 77 85 69 54 68 61 W. W. 6 11 30.04 68 72 63 54 64 61 N.E. S.E. 10 9 30.01 70 77 62 90 81 86 E. S. 11 11 29.84 73 80 66 96 82 88 S.E. S.W. 4 10	29.89 84 94 75 72 66 69 S.W. S.E. 10 5 F. 19.94 78 88 68 69 52 60 W. W. 9 7 F. 30.00 77 85 69 54 68 61 W. W. 6 11 F. 30.04 68 72 63 56 64 61 N.E. S.E. 10 9 F. 30.01 70 77 62 90 61 86 E. S. 11 11 0. 29.84 73 80 66 95 82 88 S.E. S.W. 4 10 R.	29.89 84 94 75 72 66 69 S.W. S.E. 10 5 F. F. 9.94 78 88 68 69 52 60 W. W. 9 7 7 F. C. 30.00 77 85 69 54 68 61 W. W. 6 11 F. O. 30.04 68 72 63 56 64 61 N.E. S.E. 10 9 F. F. 9.00 170 77 62 90 81 86 E. S. 11 11 0. O. 9. 29.84 73 80 66 95 82 88 S.E. S.W. 4 10 R. O. O.

*O., cloudy: C., clear: F., fair: G., fog: H., hazy: S., smoky: R., rain: T., threat-coing: N., snow. † Indicates trace of rainfall ar Mean for week.

RECORD OF MORTALITY FOR THE WEEK ENDING SATURDAY, AUGUST 4, 1894.

	-bdc	đ	Ę	Per	centag	e of de	aths f	rom
Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Infectious diseases.	Consump-	Diarrhoal diseases.	Typboid fever.	Diphtheria and croup.
New York	1,986,000	988	517	82.90	8.30	24.40	.70	4.30
Chicago	1,438,000	-	- 1	_	_	-		_
Philadelphia .	1.139.457	577	268	28.90	7.65	22.27	1.67	2.38
Brooklyn	1,013,000	561	317	36.00	7.02	26.10	.72	5.40
St. Louis	540,800	!	_	_				_
Boston	501,107	276	145	35.2 8	9.72	27.00	1.44	5.04
Baltimore	500,000	٠	=	~ =		12.64		
Washington .	285,000	127	44	26.86	6.32	12.64	10.27	1.58
Cincinnati	325,000		_	_	-	_	_	-
Cleveland	325,000	103	58	48.65	12.61	35.89	1.94	1.94
Pittsburg	272,000	103	96	20.00	12.01	30.00	1.02	1.02
Milwaukee Nashville	265,0±0 87,754	30	9	16.66	23.33	10.00	6,66	
Clls a sel a sela a se	65,165	87	21	21.60	10.80	16.20	0.00	_
Portland	40,000	-	==	2	.0.00	_	_	_
Worcester	100,410	41	28	48.80	_	41.48	2.44	2.44
Fall River	92,283	64	43	42.12	4.68	42.12		
Lowell	90,613	89	28	58.84	2.56	58.88	_	_
Cambridge	79,607	37	15	43.20	5.40	32.40	_	2.70
Lynn	65,123	19	11	31.56	_	31.56	i	_
Springfield	50,284	21	10	47.62	-	42.54	=	
Lawrence	49,900	<u> </u>	_	_	-		_	_
New Bedford .	47,741	31	20	45.22	9.69	45.22	_	_
Holyoke	43,848	-	_	-	_	_	_	-
Brockton	33,939	1 ==	I =	- -	i . .			_
Salem	83,155	19	11	36.82	5.26	26.30	5.26	_
Haverhill	32,925	15	10	39.99	-	39.99 26.66	_	-
Malden	80,209	15 25	13	39.99	6.66	20.00	4	6.66
Chelses	29,808	9	16	12.00 33.33	16.00	33.33	4.00	8.00
Fitchburg	29,318	-	_	00.00	_	30.30	_	_
Newton	28,837 27,293		_	_	_		_	
Gloucester	26,955	9	4	33.33	22.22	33.33	_	_
Taunton Waltham	22,058	1	2	25.00	50.00	25.00		_
Quincy	19,642			-0.00	-		_	=======================================
Pittsfield	18,802	8	4	50.00	12.50	50.00	1111111	
Everett	16,585	5	5	80.00	_	80.00	_	
Northampton .	16,331	12	3	41.65	25.00	16.66	_	16.66
Newburyport .	14,073	6	4	66.66	_	50.00	_	_
Amesbury	10,920	2	0		-	—	_	_
	1		<u>. </u>	<u> </u>	<u> </u>			

Deaths reported 3,119: under five years of age 1,634; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 1,174, diarrheal diseases 817, consumption 255, acute lung diseases 119, diphtheria and croup 113, typhoid fever 47, whooping-cough 40, measles 14, cerebro-spinal meningitis 13, scarlet fever 12, malarial fever 12, erysipelas 5, small-pox 2.

From whooping-cough Philadelphia 12, New York 10, Brooklyn 8, Boston 3, Washington, Pittsburg, Cambridge, Springfield, Salem, Malden and Newburyport 1 each. From measles Brooklyn 6, New York 5, Pittsburg 3. From cerebro-spinal meningitis New York 7, Washington 2, Philadelphia, Worcester, Everett and Northampton 1 each. From scarlet fever New York 5, Boston and Somerville 2 each, Brooklyn, Cambridge and North Adams 1 each. From malarial fever Brooklyn 5, New York 4, Charleston 2, Philadelphia 1. From small-pox New York and poklyn 1 each. oklyn I each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending July 28th, the death-rate was 17.0. Deaths reported 3,409: acute diseases of the respiratory organs (London) 160, diarrhea 267, measles 115, whooping-cough 80, diphtheria 73, scarlet fever 53, fever 27, small-pox (Birmingham 4, London, Plymouth and Manchester 1 each) 7.

The death-rate ranged from 9.5 in Gateshead to 24.4 in Liverpool; Birmingham 14.5, Bradford 16.8, Croydon 13.5, Huddersfield 15.9, Leeds 15.6, Leicester 13.2, London 17.2, Manchester 18.8, Newcastle-on-Tyne 16.3, Nottingham 17.0, Plymouth 11.3, Portsmouth 11.9, Salford 20.3, Sheffield 18.8, West Ham 14.4.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 4, 1894, TO AUGUST 10, 1894.

A board of medical officers to consist of MAJOR VALERY HAVARD, MAJOR JOHN VAN R. HOFF and MAJOR GEORGE H. TOENEY, surgeons, is, by direction of the Secretary of War, appointed to meet at West Point, N. Y., August 15, 1894, or as soon thereafter as practicable for the physical examination of the cadets of the first and third classes; the cadets of the second class on their return from furlough and such other cadets of the Military Academy and candidates for admission thereto as may be ordered before it.

Leave of absence for one month, to take effect about August 5, 1894, is granted Captain W. Fitzhugh Carter, assistant surgeon.

CAPTAIN WM. J. WAKEMAN, assistant surgeon, U. S. A., granted one month's leave of absence, on completion of his duties at Fort Thomas, Rifle Range, Ky.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U.S. NAVY FOR THE WEEK ENDING AUGUST 11, 1894.

F. L. DuBois, medical inspector, detached from U. S. S. "Chicago," ordered home and granted two months' leave.

RECENT DEATH.

REUBEN D. CLARK, M.D., State Chemist of the State of New York and a prominent physician in Albany, died August 11th, aged forty-seven years. He graduated from the Long Island College Hospital in 1875.

BOOKS AND PAMPHLETS RECEIVED.

Circular of the Graduate School of Harvard University, 1894-95.

Alumni Oration. By Hon. Charles Emory Smith, Philadelphia. Reprint. 1894.

Sur l'Anatomie et la Physiologie des Articulations Sacro-Iliaques Avant et Après la Symphyséotomie. Reprint. Paris. 1894

Harvard University Announcement of Courses of Instruction Provided by the Faculty of Arts and Sciences for the Academic Year, 1894-95.

Prevention and Treatment of Cholera. The Treatment of Typhoid Fever. By Elmer Lee, A.M., M.D., Ph.B., Chicago, Ill. Reprints. 1893-94.

De l'Agrandissement Momentané du Bassin, Rapport lu au Congrés International des Sciences Médicales Tenu à Rome du 29 Mars au 5 Avril, 1894. Par Adolphe Pinard. Paris. 1894.

De l'Agrandissement Momentané du Bassin Oblique Ovulaire par Ischio-Pubiotomie, Avec Considérations sur la Puissance Nocive du Forceps, etc. Par L. H. Farabeuf. Reprint. Paris. 1892.

Dystocie du Détroit Supérieur: Mécanisme, Diagnostic, Traitement, Symphyséotomie. Compte-rendu d'une Demonstration Obstétricale Faite à Rouen, Caen, Rennes, Nantes et Angers du 12 au 18 Avril, 1894. Par L. H. Farabeuf. Reprint. Paris. 1894.

Increasing the Length of Bones; The Means of Increasing the Length of Bones and of Arresting their Growth; The Application of Some Experimental Facts to Surgery. By L. Ollier, Lyons, France. Translated by B. Merrill Ricketts, Ph.B., M.D., Cintered Companies. cinnati, O.

The Reactions of Nucleo-Albumin (Erroneously Styled Mucin) with the Commonly Employed Urinary Albumin-Tests: the Difficulty of Distinguishing these Reactions from those of Serum Albumin, Globulin, etc. Remarks on the Occurrence of a Normal, Constant Trace of Albumin in the Urine. By D. D. Stewart, M.D., of Philadelphia. Reprint. 1894.

Original Articles.

MALIGNANT DISEASE OF THE UTERUS.

BY E. H. TROWBRIDGR, A.B., M.D., OF WORCESTER, MASS., Surgeon to the Out-Patient Department of the Worcester City Hospital.

Or all the diseases which afflict women, none is more abhorrent or more dreaded than cancer; and especially is it so, when the growth is connected with the uterus, for here the disease is unseen and its rapid progress undetected, and the woman is in almost total ignorance of her true condition.

It is estimated that of the number of women who die from cancer, one-third die from cancer of the uterus; and the very fact that this disease has made rapid advance in a great many patients before they seek surgical advice renders it important that every physician should make an early diagnosis, and prepare the patient for the necessary subsequent treatment.

Hence I desire to consider such minor and such salient features of malignant disease as will enable us to render an early diagnosis, and, secondly, to consider such radical operative procedures as will give the patient the greatest relief and, if possible, establish a cure.

The cervix, the same as other oral regions, is naturally the favorite seat of the disease, which, at first, is no doubt purely local, and may be in its nature a carcinoma, a scirrhus, a medullary, an epithelioms or a sarcoma.

The idea of a cancer rarely suggests itself to a woman under the age of thirty-five; but after this age is passed and the fortieth cycle is approaching, then this thought arises whenever anything occurs, out of the natural course of events, which calls attention to the pelvic organs. If the menopause subsides without any special disturbance, then the woman is easy in her mind until the age of fifty is reached; from that time until sixty, the dreaded disease may assert itself with all its accompanying symptoms.

Cancer of the cervix generally appears as a papillary or cauliflower growth, or may assume a nodular form, or become a superficial ulceration of the mucous membrane. The first grows from the intravaginal portion of the cervix, where it may be limited for a long time; but later on it spreads to and involves the adjacent tissue. The nodular variety starts as one or several nodules in the cervical mucous membrane; but this mucous membrane is soon destroyed, and then the cancerous nodules fuse together and the disease extends. The last, or superficial, form begins as an infiltration of the mucous membrane, which in time is completely invaded with the disease.

The symptoms of cancer vary somewhat in degree, depending on whether the cervix or the body of the uterus is involved. In the cervix, probably more than in the body, the disease may exist for some time without anything transpiring which will attract the attention of the patient.

The appearance of blood at such unnatural times as between menstruation, or as a profuse menstruation; or, after the menses have subsided, hemorrhage starts up again or appears after coition, causes the woman manifold anxiety.

In scirrhus, hemorrhage may be absent, though generally it is present. This hemorrhage is frequently

 1 Read at the meeting of the Worcester Medical Association, May 23, 1894.

attended with a sanious or serous discharge, which, when ulceration takes place, changes to a greenish-yellow, green-brown or blackish color, with more or less offensive odor, according to the advance of the disease.

This serous or watery discharge, I believe is an important early sign, and appears even before the hemorrhage; the amount of this discharge is wrongly estimated, because at times the hemorrhage accompanies it. The intensely congested blood-vessels in close proximity to the growth are drained of their watery elements, and there is a more or less constant serous flow, which often precedes the appearance of the blood; this watery discharge also constitutes the greater part of the leucorrheal flow which is often complained of by the patient.

There are cases when the hemorrhage may be slight or wanting; but I have never seen one which did not have more or less leucorrhea. I desire to emphasize this statement because we see and are informed of cases where they have been told, after relating the abovementioned symptoms, that this is only a slight leucorrhea probably attending the menopause, when in reality the physician has made no examination and does not suspect the presence of any cancerous growth. I look with just as much suspicion on those cases having a thin watery discharge, attended with leucorrhea, as I do on those cases where the first indication of disease is hemorrhage.

Then, too, pain may be somewhat deceptive; by some authorities it is considered as the third important symptom, and so it is, though not present during the early advance of the disease. This symptom, above all others, is the one in regard to which the laity entertains a mistaken idea; it is the universal opinion that cancer cannot exist without that degree of pain which varies from the mild to the excruciating. How often we hear patients and friends remark that there has not been any pain, and that they have only a slight flow or some leucorrhea! This is almost the universal answer given to me when I question the patient in regard to her early symptoms; and because they have not had any pain, it is difficult to convince them or their friends that cancer exists.

Then, too, the woman often looks so vigorous and healthy that these signs might appear to be exaggerated, and it seem an impossibility for cancer to be present; too often, I fear, physicians have been misled, and have desisted from giving their patients that thorough examination which should be accorded to every one who consults us, and have waited for time to reveal the true state of the disease.

As the disease advances, the patient discovers that the hemorrhages become more frequent; that the thin watery and bloody discharge becomes more offensive; that the pains in the lumbar region become more severe; that the digestive tract begins to be disturbed; and still later on appears the characteristic cachexia, with the skin harsh and dry. By this time the adjacent tissues and organs have become more or less invaded.

In the body of the uterus we find that cancer is less frequent; but when it does exist, it is a disease of advanced age, and originates in the glandular elements of the endometrium, and appears as a polypoid degeneration or a diffuse infiltration, and may extend to the tubes and ovaries. Here the symptoms I have mentioned are intensified to the fullest degree. The hem-

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orrhage is generally profuse; the watery discharge copious; the pain violent and extending down one or both extremities, or it may simulate labor pains, as when the uterus endeavors to expel its contents through a narrowed cervix. When the peritoneum, broad ligaments and cellular-tissue become invaded, then the pain is liable to be excruciating.

I desire to here relate the history of three cases

which illustrate these points.

CASE I. Mrs. S.; seen with Dr. Whittaker. American, age fifty eight. Has had five children. Menstruation ceased at the age of fifty-three. Three years afterwards she fell down a flight of stairs, and has been ill since then. Shortly after the fall, she had a severe cold, and from excessive coughing she first noticed a discharge of blood from the vagina; this was unattended by pain except on coughing. Two years after, she commenced to experience severe pain in the uterus and its appendages, which has continued up to the present date (March 27, 1894).

In 1892 she was examined by the late Dr. Lincoln, of Millbury, who pronounced it "cancer of the womb."

Mrs. S. was first seen by Dr. Whittaker on December 1, 1893. At that time the os was hard and immovable, and the walls of the vagina were involved.

At the present date (March 27th) she says she has hemorrhage at times, but all the time has a bloody, watery discharge, very offensive. Is weak, and gradually becoming more so, and is obliged to resort to the use of opiates to relieve pain, and to antiseptics to overcome the offensive odor and relieve the watery flow.

This woman had delayed having anything done; and when I saw her the disease had so extended, that curettage and cauterizing was the only procedure to advise. This, however, she did not have done.

CASE II. Mrs. H., seen March 5, 1894, and sent to me by Dr. H. Warren. Her age is forty-two, married. Family history good. Has had five children; no miscarriages. Does not remember when she was first unwell; but since menses were established, has been very regular up to two years ago, and then flow became more frequent. About six months later, she began to have pain in the left side. Nine months ago she began to have profuse menstruation attended with clots, and for past six or seven months the vaginal discharge has been continuous, tinged with blood and very offensive. Has had pain over uterus, also pain in stomach followed by vomiting; bladder becoming a little more irritable and urination more frequent; appetite diminishing and flesh decreasing.

At the above date (March 5th), when I saw her, the external os was greatly enlarged and the growth protruding; the cervix, posterior to the growth, was tough; the uterus enlarged, with appearance as though the whole cavity was involved; at the anterior portion of the vaginal vault and to the left, the nodules could be felt. I advised a thorough curettage and removal, if it could be done.

A thorough curettage was done, followed by use of The greatest discomfort which the thermo-cautery. now annoys the patient is a copious watery discharge. There have been three periods of bleeding, one quite profuse. The odor has disappeared due to the use of antiseptics. Pain has at no time been an important factor.

At present the patient is fairly comfortable, and able to go out riding on pleasant days; she is holding her | Patie died July 4, 1894.

own in appearance, and any one would hardly suspect that cancer has so extensively invaded the uterus and vagina.2

CASE III. Mrs. E., age forty-two, housekeeper. She was first seen in the spring of 1893, and from the appearance of the growth on cervix, I suspected cancer and at that time I advised that she be kept under observation, as there might be a malignant condition existing.

After being thus informed and advised, she soon afterwards consulted three other physicians, believing that it was impossible for such a condition as cancer to exist, when she felt and looked so healthy.

I did not see the case again until October, 1893, when she consulted me, and gave the following history: For the past few months she had bled quite profusely at and between menses, also during coition; no pain at any time; discharge not offensive. Examined patient, and found os greatly enlarged; it bled at the slightest touch. The cervix was completely invaded with a cancerous growth. I advised curettage and a microscopical examination of the scrapings.

On November 1st, assisted by Dr. Clark, the cervix was thoroughly curetted. There was no doubt as to the diagnosis; yet I desired an examination of the shreds, and the following is Dr. F. H. Baker's report of November 22, 1893:

"The report of the tissue taken from the cervix which you sent in is: — A section half an inch long by one-quarter of an inch wide; grayish opaque; partly firm and dense; partly soft and friable; consisting of fibrous tissue, with irregular, infiltrating nests of epithelial cells, many undergoing fatty change; also considerable cystic glandular degeneration. Diagnosis, carcinoma." I desire to emphasize the great importance of an early microscopical examination; this should be done, not only in those cases where diagnosis is unmistakable, but in those cases where we have the least suspicion. Only by so doing can we scientifically investigate and determine the true nature of the disease.

After receiving Dr. Baker's report, I informed the patient of the nature of the disease, and advised a vaginal hysterectomy in the near future. To this she readily gave her consent; and on December 3, 1893, the operation was performed. I was assisted by Drs. J. B. Rich, Clark, Baker, Wilder and McKenzie. Dr. Davis, the consultant, was also present.

TECHNIQUE OF THE HYSTERECTOMY.

After rendering the parts aseptic by means of a bichloride douche (1 to 2,000) and exposing the cervix by the use of the Sims speculum and side-retractors, I stitched together the anterior and posterior lips of the cervix, and also passed a silk suture through the centre of each lip — the same as in trachelorraphy — by means of which I could make traction and thus avoid the use of the volsellum. The cervix was then ringed with the scalpel, the incision being close to the cervix; for we must remember that the ureter on each side is only one-half an inch away. After separating the cervix, the forefinger of the right hand was forced between the uterus and bladder, and the fold of peritoneum anteriorly was opened and slit laterally to the broad ligament. The peritoneum in Douglas's pouch was separated in the same way, leaving the uterus hanging or suspended by the broad and round ligaments.

By making traction with the sutures already passed through the centre of each lip, the cervix was brought well down in the vagina, and the first series of catgut ligatures, including the uterine artery, was passed on each side. After cutting the tissue between ligature and uterus, the second series of catgut ligatures, including the tissue between the uterine and ovarian arteries, was passed and intervening structures severed. Finally, the third series of ligatures, including the ovarian artery and the Fallopian tube, was passed, and the remaining structures cut and the uterus freed.

In this case I was able also to remove the right ovary. The anterior fold of peritoneum was stitched with catgut to the anterior wall of the vagina; the fold of peritoneum posteriorly was likewise sutured to the posterior wall of the vagina; then these two lines of sutured surfaces were stitched together by catgut, and the wound rendered as firm as possible. Iodoform was dusted along the line of sutures, and slight gauze packing inserted into the vagina.

Convalescence was uninterrupted; and three weeks from the day of operation the patient was able to go

to the dining-room for dinner.

Since the operation she has gained in flesh, and at present is feeling in excellent health. Of course, it is impossible to tell whether or not there will be a recurrence, as the time limit is three years.

A short time ago this patient remarked that it was worth all she had gone through — operation and expense — to be relieved of the bloody, disagreeable discharge, which made life miserable to the extreme.

In those cases where removal of the uterus is not warranted by reason of the too extensive involvement of the surrounding tissues, the next best method is to thoroughly curette, and then cauterize with the thermocautery or with the chloride of zinc solution.

The use of clamps, to control hemorrhage from either the uterine or ovarian arteries, I do not believe in; and the method of employing them (clamps), which in the early days of hysterectomy was more extensively used than at present, will in time be supplanted

by the ligature.

As to the ligature, I believe that catgut is the only material to use. If silk is used, it should be so cut as to have one portion of the ligature very long and protruding through the wound, so that when it separates from the tissue it can be removed; and thus no material, to act as a foreign substance, will be left in the pelvic cavity.

EXPERIMENTAL VAGINAL HYSTERECTOMY ON THE CADAVER.

In doing experimental work on the cadaver, I found that the uterus could or could not be brought down easily in the vagina, according to the plan adopted.

In one series of experiments I made a long median abdominal incision to enable my assistant to watch, from the abdominal stand-point, and inform me how the tissues acted as each step of the operation was taken.

I first did the hysterectomy (vaginal) by ringing the cervix and passing the ligatures on each side, and cut the tissues between ligatures and uterus; the uterus was then pulled down as far as the cut tissues, laterally, would allow, and the second series of ligatures passed and the intervening tissue cut as before. At this stage I punctured the peritoneum anteriorly and posteriorly, slit it laterally, and passed the third series of ligatures.

By this plan I found that the fold of peritoneum which passes from the anterior wall of the uterus, opposite to the internal os, to the posterior surface of the bladder held the uterus as an anterior check ligament, and prevented the uterus from being readily pulled down into the vagina; and also, when making traction on the uterus, the bladder was pulled backward by the attached peritoneum.

In another series of experiments, after making the abdominal incision for the purpose of watching the manipulation, and ringing the cervix, I separated, at the first step, the peritoneum from the uterus anteriorly and posteriorly, and after puncturing it, slit it laterally to the broad ligaments, as was done in the operation on Case III. The uterus was then left suspended; and in making traction, there was nothing anteriorly or posteriorly to check the uterus, as was the case when the peritoneum was left intact, until the last step of passing the third series of ligatures, as in first method of experiments.

In this latter method, after the uterus was completely freed anteriorly and posteriorly, the ligatures were very easily passed, the uterus readily brought down in the vagina, and the operation rendered more expeditious.

Especially when the uterus is enlarged, will the method of first separating the peritoneum anteriorly and posteriorly, enable the surgeon to more dexterously perform the hysterectomy.

REMARKS ON CERTAIN ACCIDENTS OCCUR-RING IN PULMONARY TUBERCULOSIS IN CHILDHOOD.

BY CHARLES GREENE CUMSTON, B.M.S., M.D.,
Acting Assistant Pathologist to the Boston City Hospital.

In this short paper I do not intend to describe the different forms of tuberculosis in children, but desire to call attention to two important complications of this disease, namely, hemoptysis and pneumothorax.

I have in mind some twenty-five cases of pulmonary tuberculosis, of which eight were important because the disease was not characteristic. These patients were thin and presented symptoms of bronchitis; they were born of tuberculous parents, and the parents were themselves children of scrofulous descent. After a stay in the hospital, these patients were sometimes better, or their condition remained the same; and the diagnosis has remained doubtful, tuberculosis being suspected but never proven by any real symptoms. One child was afflicted with Pott's disease, and was taken quite suddenly with the miliary form of tuberculosis; but the parents took him away before the end of his illness. Seven patients had tuberculosis affecting the form of broncho-pneumonia, and all died; their ages varied from a year and a half to five years. Rickets, scrofula, athrepsia,* repeated bronchitis, typhoid fever and measles are, according to my observations, the diseases having usually preceded the début

*There is a singular misunderstanding among the English-speaking profession as to what athrepsia, as the French understand it, really is; and I here would like to define it in as few words as possible. I would say: Athrepsia is a dystrophia of newly-born children, characterized by the non-assimilation of alimentary substances. From this, considerable emaciation results, accompanied by a group of symptoms and anatomical lesions of which Parrot has given such a remarkable description. In the great majority of cases, athrepsia has for starting point a bad alimentary regimen; milk is given in insufficient quantity, it is of bad quality, want of regularity in giving it, and especially premature alimentation are the principal causes of its production.

of tuberculosis or have been favorable to its development. Once only, could no physical signs or localization of the disease be discovered, but the autopsy showed that many lobules of both lungs were invaded. In all the other cases, the lesions formed foci, confluent or in one or several points, giving during life the usual signs of congestion and hepatization. In four cases the progress of the disease was acute, death occurring in from two weeks to twenty-six days; three times the patients lived a little over two months, and at the autopsy an extensive pseudo-lobar hepatization or caseous pneumonia with caverns was observed. But these cases are what are commonly found in children, consequently I will not insist further, but will give some rather uncommon complications taken from my notes on cases.

All writers agree as to the extreme rarity of hemoptysis in young children, I mean, be it understood, those in whom tuberculosis takes the form common to young age, and not those cases in which the lesions are similar to those found in adults. If hemoptysis is rare, especially at the beginning of the disease, it

appears to be less so at the last.

Rilliet and Barthez relate some examples in which it was nearly always mortal. According to them, hemoptysis only shows itself in children having an advanced tuberculosis of the glands, and they know of no case in which the final hemorrhage came from a cavern, unless there were at the same time some enlarged bronchial glands. All the patients who presented this complication were (with one exception, who was three and a half years) over seven years of

Henoch has seen slight hemoptysis a dozen times; once, only, severe hemorrhage. He has never observed perforation of a large pulmonary vessel pro-

duced by peri-bronchial adenopathy.

West mentions seven cases of tuberculosis, ending abruptly with loss of blood from the lungs. Autopsies were made in three of these cases, and in only one did he find a cavern communicating with a ruptured vessel; the age of this patient is unfortunately not

Dr. Berger 1 saw a similar case in private practice in

a child aged four.

Baginsky 2 has met with this complication apparently quite often; for he says, "Hemoptysis is seen in young children, and I have observed it many times."

Steiner and Wyss have also reported cases in chil-

dren varying in age from two to six years.

D'Espine and Picot semention a case of a boy, age thirteen, who had repeated hemoptysis during his phthisis, and this was one of the causes of death: they say, however, that as an initial symptom, it is much less frequent in children than in adults.

Smith 4 says: "Hemoptysis is rare under the age of six years, and less frequent subsequently than in the adult. It is most apt to occur in those cases in which there is already passive congestion of the lungs, produced by the pressure of enlarged bronchial glands."

Jacobi writes: "Profuse hemorrhages are rare in children. I do not remember more than half-a-dozen cases of pulmonary hemorrhage in children, except those which took place in violent attacks of whoopingcough. Only one of my cases - phthisis - was three years old; one, a girl of eleven, had repeated attacks extending over a year, and exhibited infiltratious of the upper lobe afterwards; the others occurred in cho-pneumonia is more common in the very young.

children affected with phthisis, early or late stage, of from seven to eleven years."

Lastly, Professor Osler 6 expresses himself in these terms: "Hemoptysis may be said to be infrequent in children under ten. Certainly, it is very rare at the onset. It is usually small in quantity. The terminal hemoptysis, common in the adult, but rare in children, results from the rupture of an aneurism in a small cavity or erosion of a branch of the pulmonary artery."

From what has been said, it is evident that this complication is very rare in children under six years of age, and even then is infrequent; consequently the following case may be of interest on account of the age of the patient, the considerable quantity of blood lost, the pathological investigation with its findings, and the rarity of hemoptysis in young subjects:

A little boy, sixteen months old, thin and sickly, had never been well, and had continual diarrhea and vomiting. The child was seen on July 10th at the hospital, his mother asking, on account of her great misery, permission to leave him for a few days in spite of his age. After a few days with a good milk diet, the child was better; but this amelioration was only temporary. On July 19th he commenced to lose flesh, and rales could be heard. On the 23d very marked dulness was noted in the right axillary line, extending to the front up to the sternum. For two days the child had rendered about two cuspidors full of blood, by the nose and mouth. The little patient suddenly died on the morning of July 24th, during a very abundant hemoptysis of red blood which was thrown out in jets. An autopsy, twenty-four hours after death, revealed the following: All the organs were anemic. Both lungs adhered to the costal walls. In the anterior mediastinum, near the union of the first and second pieces of the sternum, was found a bunch of caseous glands softened in their centre. A similar tumor was found a little lower down, in the posterior mediastinum. Both lungs were riddled with tubercles; they cried under the knife, and were hard to cut. In the right lung there was a cavity the size of a walnut, and filled with a clot of red blood, situated in the anteroinferior part of the upper lobe. Above the cartilage, and in immediate contact with it, was a large branch of the pulmonary artery. A communication was found, with a probe, between the artery and the cavity, having a calibre large enough to admit a goose quill; the tunics of the artery formed a kind of incomplete valve. By moving the probe gently in the cavity, a bronchial tube was found opening directly into the cavern near the artery. The liver, spleen and peritoneum were filled with tubercular granulations. This case demonstrates how tuberculous lesions, even advanced, may remain a long time undiscovered, or, at least, only give very few physical signs. In fact, it was only two days before death that rales could be heard, and dulness was only discovered the evening before death, and for all that there was an enormous cavern in the subclavicular region, which is generally accessible to the ear. It also proves the truth of the statement made by Rilliet and Barthez and Smith that hemoptysis hardly ever is present excepting in children having advanced tuberculosis of the glands.

Pneumothorax, on the other hand, is more frequent under the age of five than above, in the proportion of ten to five, according to Rilliet and Barthez; and they believe that this frequency is due to the fact that bronThe perforation is generally found in the middle or inferior dorsal aspect of the lung, and the pneumothorax is more often general than partial. The début, which is sudden and characterized by violent pain and intense dyspnea, can also be the same in children; however, it is usually less pronounced in the latter. Once formed, a pneumothorax has the same physical signs as in adults; and death occurs either in a few hours or after a more or less long period of cachexia and hectic. Cure may be brought about, as in a case of Rilliet and Barthez, and one of Sanné. It is true that these were not tuberculous patients, so to speak; but the writers who report them say that pneumothorax occurring in phthisis should not necessarily be considered fatal to the patient. They saw this lesion disappear when tuberculosis was only slight, and the latter disease was left to continue its course. Cadet de Gassicourt relates the case of a purulent pleurisy, treated by empyema, in which a pneumothorax appeared. The child was cured and has been in good health ever since, a period of seven or eight years. As in adults, a pneumothorax is often complicated by a fluid collection in the pleural cavity; this only if it is not final, that is to say, if the life of the patient continues long enough for the liquid to form.

The diagnosis presents some serious difficulties, ou account of the age of the patient and the insidious commencement of the lesion. Dieulafoy says that pneumothorax is more frequent in adults than in children, but it is met with in the latter even under two years of age. Tubercles produce perforation at all ages; rupture of the vacuoles of broncho-pneumonia produces it exclusively in the young, aged from two to four years.

West considers pneumothorax more infrequent than hemoptysis. This, however, I am not disposed to admit, although I cannot give sufficient proof of its being erroneous. But the frequency of caseous pneumouia in children, the superficial situation of the cavities resulting from the breaking down of tuberculous lobules, the thinness of the tissues separating them from the pleural cavity, would lead one to suppose that such a lesion ought not to be a great exception.

Here are two cases that seem worthy of noting:

CASE 1. A child, two and a half years old, entered the hospital on March 3, 1888. No history could be obtained. He presented manifest signs of a left pneumothorax, consisting of an amphoric souffle, and the copper bruit produced on percussion by means of two pieces of money. There appeared to be no fluid in the cavity. The general condition was bad: dyspnea, fever, wasting of the tissues. Three days later, a dulness was found at the base of the left lung, as well as a soft souffle; but there was no evidence of hippocratic succession. The signs of perforation remained stationary. The face was earthy in color, and one could see that the child was growing weaker. The physical signs remained the following days, and there was no doubt as to the existence of a pneumothorax.

The child was taken away by his parents after being in the hospital twenty-one days, so that, unfortunately, no autopsy could be had.

Case II. A boy, age two, rachitic, born of tuberculous parents. They had had in all six children, four of whom were dead. One died of whooping-cough, and one of pulmonary tuberculosis. Consequently, the antecedents of our little patient were clear, as re-

most complicated. He entered the hospital on January 20th, with nervous accidents of so great intensity that at first a cerebral tumor was thought of, and the autopsy gave us no light on the cause. By February 9th the nervous symptoms had ceased, and the child was taken with measles. Two days later we found dulness, souffles, and râles over the left base in the back and extending towards the front of the thorax. The child was cross, and the temperature was quite high; and, considering the antecedents of the patient, we had serious reason to suppose that tuberculosis was

not a stranger to the etiology of the pulmonary lesion.
On February 18th, eight days after finding the above symptoms, they were no longer present; but the child was still cross, and the temperature remained between 38° and 39°. Our diagnosis, in spite of the absence of physical signs, was correct; for on the days following, emaciation made rapid progress, the fever persisted, the patient became weaker and cried continually.

On February 26th, in the midst of these ill-defined symptoms, two weeks after the début of the pulmonary symptoms, we found all the signs of a pneumothorax in the inferior third of the chest on the left, both behind and in front. Perforation took place in an insidious fashion, for nothing during the preceding day or night had called our attention to it. We found all the physical signs of a collection of gas in the pleura, but succussion could not be produced.

The child died on March 1st.

At the autopsy, the left pleural cavity was found to be filled with air. The lung was pushed upwards and to the front, and was held in this position by adhesions to the costal wall. The rest of the cavity was lined with a doughy pus, if I may be allowed this expression, forming a kind of false membrane. There was very little purulent fluid at the base. A perforation about the size of a five-cent piece was found at the inferoexternal part of the upper lobe, and put the pleural space in communication with a cavity the size of a walnut, into which several bronchi opened. The left and right lungs were infiltrated with numerous foci of tubercular broncho-pneumonia.

To sum up, here was the case of a child predisposed by birth to tuberculosis, and who contracted measles in the ward. The measles became complicated with a tubercular broncho-pueumonia, with final pneumothorax, the child dying in twenty days. I would again call attention to the fact that the cavity had escaped notice during the entire illness, although the chest was carefully examined every day.

My thanks are due to Dr. E. Revilliod for his kindness in allowing me to publish the above cases.

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THE present-day euphemism for "the world, the flesh and the devil," says the Rev. Joseph Parker, gards the tuberculosis. His pathological history was of London, is "'society' environment and tendence."

SYMPHYSEOTOMY FOR THE RELATIVE IN-DICATION, WITH COMPLICATIONS.

BY EDWARD P. DAVIS, A.M., M.D., Professor of Obstetrics in the Philadelphia Polyclinic; Clinical Professor of Obstetrics in the Jefferson Medical College.

Antisertic symphysectomy for the accomplishment of difficult labor is too familiar to require defense, explanation or comment. Two unusual complications made the case in point interesting to me, and added observations of practical value to my experience with this operation.

The patient, a Polish woman, ignorant of English, was admitted to the Jefferson Maternity during the past spring in a pregnant condition. Through an interpreter, it was learned that her age was about forty. Her previous health had been good. Her sister had died after childbirth with a great swelling of the thigh and abdomen. On examination, the patient was fairly Her fetus, at the ninth month of pregnancy, was in the first position. She presented no apparent abnormality in the skeleton; her pelvic measurements were

Anterior Superio	r Il	iac	Spin	86	٠.						27 c	
Crests of Ilia				•			•	•	•		27≩ c	m.
Trochanters			•	•	•	•	•			•	31 c	m.
External Conjug	ate					.•	•	•		•	19 c	m.

Fetal heart sounds were strong and regular. The placenta was not discernible. Physical examination of the thorax and abdominal region revealed no abnormality. The patient's urine was that of a normal pregnant woman. By suprapubic manipulation the head was brought to the brim of the pelvis, presented in the right oblique pelvic diameter, and dipped slightly into the pelvis. During the time which elapsed be- lows: tween admission and confinement the patient's health was good, and she did housework without inconvenience.

Her labor was tedious, labor pains were good, the head presented in the right oblique pelvic diameter and partially engaged, Naegele's obliquity being more As exhaustion threatened, after dilatathan normal. tion was complete and all other means had been used to facilitate labor, the patient was etherized and the membranes ruptured. While an assistant endeavored to promote the descent of the head by suprapubic pressure, Simpson's forceps was applied to the sides of the child's head, and axis-traction made with the Poullet tape attachment. A half-hour's intermittent traction failed to cause descent of the head, but increased the obliquity, the parietal bone of the right side presenting. No further efforts with forceps were made. As symphyseotomy was not expected, a pause of an hour ensued for suitable preparation and to secure instruments required. During this time the patient slept quietly.

She was again etherized, and symphyseotomy performed. The first complication of interest encountered was an abnormal height and ossification of the pubic joint. The Galbiati knife, the chord of whose arc readily fits the height of the pubes in the average female skeleton, failed to grasp the joint. When a probe-pointed bistoury was used, the cartilage was found partly ossified. The joint was accordingly opened with a finger saw. The surfaces immediately separated two fingers' width, the child was readily delivered by forceps in the usual mechanism, and although asphyxiated, was resuscitated. The perineum was

pressing the urethra back from the severed bones. This was removed after twenty-four hours, and the wound entirely closed.

The patient's temperature ranged from 100° to 102° F. for the first week after delivery. Perineal and abdominal wounds healed promptly and well. Lactation was established, nutrition and excretion were well performed. The temperature then became normal, and so continued until the 21st day. It is my custom to allow symphyseotomy patients to first turn upon the side three weeks after the operation, and then with the assistance of a nurse. As the patient could not understand perfectly what was said, she eluded the nurses, and while a labor in an adjoining ward was in progress, turned suddenly over. This was followed by thrombosis of the femoral veins upon the left side, accompanied by swelling, pain especially in the popliteal space, and temperature of 102° F. So far as the genital organs were concerned there was no evidence of infection or inflammation revealed by examination. The patient's nervous system was unduly disturbed by this condition, as she stated to an interpreter that her sister had died under a similar condition. Ten days after the occurrence of the thrombosis, her temperature was normal; she was able to gradually get up and to walk Three months after delivery a thorough examination of the patient revealed no diseased condition; she was doing light housework. Examination of her pelvis revealed an increase in the internal conjugate of one and one-half centimetres following the symphyseotomy. Good union existed at the pubes. The uterus and pelvic floor were in normal condition.

The measurements of the child's head were as fol-

1									
Maximum o	li amet e	r							134 cm
Occipito-fro	ntai								12 cm
Fronto-mer									10 cm
Suboccipito	-bregn	atic							10 cm.
Bi-parietal					•				9≩ cm.
Bi-tempora	ı .			•					9 cm.
Bis-acromis	ul.								13 cm
Length									51 cm.
Weight				_	_		_	7 1	ba 11 oz.

Sex, female.

The child's head, which was distorted by efforts to deliver, acquired its normal contour. It nursed well for a week, when it developed obscure symptoms of inanition, persistence of meconium stools, and failure of strength. Death occurred on the eighth day. Postmortem examination revealed congenital absence of the common bile duct; no other cause for death could be found.

In undertaking symphyseotomy in women older than thirty, the operator must not trust wholly to a knife; this is the second case in my experience in which a condition of partial ossification has resisted the Galbiati knife and probe-pointed bistoury. The occurrence of thrombosis during convalescence may be explained by the dislodgement of septic thrombi in the uterine sinuses, although it is not perfectly clear how such infected thrombi could cause no disturbance before the patient turned. A more rational explanation to me lies in mechanical injury in the sudden turn done to vessels predisposed to thrombosis by long recumbent posture, a retention dressing about the hips, and recovery from a surgical procedure of moderate severity. There was no evidence of abscess in any part of the thighs, which might readily have followed sutured, and a gauze drain carried behind the joint, septic thrombosis. This case illustrates well the importance of good nursing after symphyseotomy, without which this patient's complicated labor would have been far more dangerous and trying.¹

The patient's pelvic measurements were such that delivery, possibly with forceps, was all that was anticipated; symphyseotomy was performed for the relative indication. The case impressed upon the operator and upon the class in clinic the futility of attempting to deliver a living child by forceps without symphyseotomy, when a relative disproportion in size between head and pelvis sufficient to prevent engagement exists.

A STUDY OF ANEMIA CASES WITH THE AID OF THE HEMOMETER AND BLOOD-COUNTER.1

SERVICE OF A. K. STONE, M.D. REPORTED BY ANNA G. RICHARDSON, M.D., ELLIOT P. JOSLIN, PH.B., AND FRANCIS P. DENNY, A.B.

Last summer, through the kindness of Dr. Stone, Mr. Joslin and Mr. Denny, of the Harvard Medical School, and I, were allowed to study with him all the cases of anemia that came to the Woman's Clinic Out-Patient Department of the Massachusetts General Hospital.

The method of examination was as follows: Every patient who showed any signs of anemia, first had her blood examined for hemoglobin. We used the instrument of von Fleischl. Then if the percentage of hemoglobin was low, the corpuscles were counted by Mr. Joslin or Mr. Denny. The instrument used was the Thoma-Zeiss. As long as the patients could be kept under observation, this was repeated from time to time. The counting and hemoglobin test was always made by the same person for each case, so as to eliminate error as much as possible, the personal error being presumably always the same.

In some of the cases in which the diagnosis was obscure, slides were prepared and stained, and the white corpuscles studied by Mr. Dolliver of the Medical School.

The hemoglobin of 168 patients was examined, all of whom presented symptoms of anemia. Of these 8 were above 100 per cent., the highest being 105 per cent.; 19 were between 90 and 100 per cent.; and considering 75 per cent. as the dividing line between the anemic and the not anemic, 89 were not anemic, that is to say, by the ordinary method, the diagnosis was incorrect in 53 per cent. of the cases. These mistakes in diagnosis were evenly distributed throughout the service. The hemoglobin of a number of persons in health was examined, and it ranged from 70 per cent. to more than the hemometer would register. found that in the anemic, and in the non-anemic, the amount of color in the skin and mucous membranes was of no value in estimating the amount of hemoglobin.

Owing to the difficulty in an out-patient department of keeping track of the patients, and to the fact that many come to the Massachusetts General Hospital simply for diagnosis, there were about 35 of these anemic cases seen a sufficient number of times, and over a long enough period, to make the cases of value. Of these, 20 were Americans; 5 were from the British

 $^{\rm 1}$ Read before the Medical Section of the Suffolk District Medical Society, March 21, 1894.

Provinces; 5 were Irish; and 1 each Russian, German and Swiss. The large number of Americans may be due to the fact that the patients who go to the Massachusetts General Hospital are generally of a better class, although many of the Americans were of With regard to age, 22 were beforeign parentage. tween fifteen and twenty years, 5 between twenty and twenty-five years; and of the six over twenty-five years, 4 were secondary anemias, and one a leukemia. Although 22 were under twenty years of age, there were only 3 school-girls, and a number of them had been at work for more than three or four years. Twelve did housework; 5 worked in shops; 8 were seamstresses, and a number were unable to work at all. The number of cases doing housework is large. is probably due to the lack of fresh air, and the attendant evils of a poor appettite and a bad diet.

The symptoms were such as are usually given: pains; usually in the head, often in some part of the chest; palpitation; dyspnea; and anorexia. Hemic heart-murmurs and a venous hum in the cervical vessels were present in a large number of cases. was one case of amenorrhea. Menstruation was scanty in about half of the cases and normal in the rest. Constipation was a symptom in 16 of the cases, but very probably this was true with more of them. There was diarrhea in two cases; in one of these the diarrhea was probably the cause of the anemia. diarrhea was stopped; and the corpuscles increased from 2,160,000 to 4,584,000 in a few days, and the hemoglobin dropped from 35 to 28 per cent. this was steadily increased to the normal by giving the patient Blaud's pills.

One case, which we suspected was of syphilitic origin, did not improve until put on potassium iodide with the iron.

Another case, age 34, in which the hemoglobin was 35 per cent., the number of corpuscies between three and one-half and four million, and the symptoms very severe, did not improve at all in three months of faithful following of directions as to fresh air, food, etc., and iron and Fowler's solution for medicine. Finally, in December (she was first seen in July) the hemoglobin had increased to 43 per cent., and the number of corpuscles to five and one-half million. This patient was seen on March 5th, when the hemoglobin was found to be 54 per cent. It was thought at first that it might be a case of progressive pernicious anemia; but the examination of the stained specimen did not bear out the diagnosis, and the later improvement also excluded this diagnosis. There was at times a slight trace of albumin in the urine. She had also a cough, but no expectoration, and the examination of the lungs was negative.

In another case, a woman twenty eight years old gave the history of having had her first child before she was sixteen years old, and ten pregnancies since, in six of which she aborted. The youngest, a child of four months, she was nursing. This woman had the lowest record of all for hemoglobin, it being but fifteen per cent., and the number of red blood corpuscles was two and one-half million. She weaned her baby, and was put on liq. potass. arsenitis, which was later changed to tincture of the chloride of iron. In four months of constant treatment she only increased to 23 per cent. of hemoglobin and four and one-half million of corpuscles. When seen two months later, she had just menstruated for the first time since the birth of her last

¹ Those interested in this subject are referred to an article by my chief nurse, Miss Russell (The Trained Nurse, July, 1894, "Nursing of Symphysectomy Cases").

child, eleven months previous. She had stopped taking iron for about a month, and the hemoglobin had

dropped to 22 per cent.

One very satisfactory case was a girl of fourteen, whose hemoglobin at first was 28 per cent., and the red blood-corpuscles were four and one-half million. In three months the hemoglobin was over 100 per cent., and the corpuscles were five million. She stopped taking her medicine, and the hemoglobin fell back to 75 per cent., but the number of corpuscles remained unchanged. Taking the medicine again, the hemoglobin increased to 86 per cent. within a month. During this relapse she had no return of her previous symptoms.

In fact, we found that in cases where hemoglobin had been low, by the time it reached 60 per cent. the symptoms were so much relieved that the patients considered themselves well. Frequently they called themselves better when there was no improvement.

An interesting case of secondary anemia gave the following history — she had not been well since an attack of the grip five mouths previous to her coming to the hospital. At the time she came, she had pains in the back, constipation, palpitation and dyspnea. The catamenia were regular but scanty. Examination of the urine gave a specific gravity of 1,018, acid reaction, no sugar, one-eighth per cent. albumin, and an excessive amount of sediment, which consisted of pus and epithelial cells. The hemoglobin was 40 per cent. and the number of red blood-corpuscles 4,368,000. She was put on extra diet and iron. On returning a week later, the examination of the urine gave the same results, and she said she passed five quarts in twentyfour hours. The hemoglobin had increased to 61 per cent. The next day she returned and said she had passed four quarts of urine in the last twenty-four The tubercle bacillus was looked for in this urine, but was not found. A physical examination showed a dull area in the right lumbar region, and resistance and tenderness on deep pressure. She was advised to go into the hospital, and was admitted a While there, there were no new developweek later. ments in her case, and she only stayed a week. She was not seen again for three months, during which time she had taken no medicine. There was no change in the character of her urine, and she said she still passed as large a quantity. Her hemoglobin had dropped to 55 per cent., the red corpuscles had decreased to 4,176,000, and the white corpuscles were 20,000. This was the last time we were able to see her.

We had one case of splenic myelogenous lenkemia. The patient was emaciated, with a dull yellowish skin. She gave a history of having had a tape-worm for some time, fifteen feet of which she had passed one month previous. She had no appetite, and was losing strength. Physical examination showed a much enlarged spleen. Examination of the blood resulted in 68 per cent. of hemoglobin, 4,648,000 red corpuscles, and 988,000 white corpuscles—a proportion of one to five. A specimen of this blood was stained, and a differential count made by Mr. Dolliver and Mr. White, resulting as follows:

She soon after entered the City Hospital, and A.B., add the following description of

her case will probably be reported with others of the same kind.

Some of the cases with the symptoms of anemia, in which the hemometer and blood-counter showed the blood to be normal, improved on taking iron.

In regard to treatment, there were three cases kept entirely on Blaud's pills, cascara or Carlsbad to regulate the bowels, extra feeding and fresh air, who made an uninterrupted recovery. They discontinued the medicine too soon and had a slight relapse; but on resuming the medicine they regained what they had lost. Two cases did not do well on Blaud's pills. A pill consisting of reduced iron (gr. i), arsenic (gr. $\frac{1}{50}$), strychnine (gr. $\frac{1}{50}$), tablets of the saccharated oxide of iron, Fowler's solution, and malt and iron were the most successful drugs used.

There were two cases in which the pill of iron, arsenic and strychnine caused a diarrhea. There were eight of the patients who took no medicine from two to three months; and in all but two of them the hemoglobin decreased, and they made a very slight gain. These patients dropped the medicine on their own responsibility, but said they carried out instructions with regard to diet, air and the care of the bowels.

regard to diet, air and the care of the bowels.

The rapidity of improvement possible in hemoglobin is very difficult to determine in an out-patient department, because of all kinds of irregularities of the patients. Those that came regularly improved accordingly. In the first part of the treatment, the greatest amount of improvement was 8 per cent. in two days, the least, 5 per cent. in one month. About 5 per cent. a week is a fair average. In a few cases it was noticed that the amount gained would alternate, being fairly large one week and small the next. Increase is more rapid in cases where the hemoglobin is 40 to 60 per cent. than in the very low.

The color-index in cases of chlorosis has been found at the beginning to be generally one-half or one-third. In the secondary anemias the color-index did not exceed one-half.

The cases are chiefly interesting because they show what can be done under unfavorable circumstances, and the errors in diagnosis the physician is liable to. For our experience convinced us that it was difficult to diagnose anemia, except well-marked cases of chlorosis, by the appearance; and that it was as impossible to know the degree of the anemia as to estimate the temperature by the touch. We found the hemometer to be of great practical service in diagnosing anemia, because it so easily and quickly determines the amount of hemoglobin. It does not diagnose the kind of anemia, but it is not misleading, for the hemoglobin was never above 75 per cent, when the corpuscles were below normal, with the exception of one case. exception was due, probably, to faulty manipulation, because a subsequent estimate of the hemoglobin was in proportion to the number of corpuscles. The amount of hemoglobin may not be proportionately as low as the number of corpuscles, but it will show a diminution. As the hemoglobin becomes normal later than the corpuscles, we have in the hemometer a valuable guide as to the improvement of the patient, and when to stop treatment. Counting the corpuscles is tedious, and need not be done as often if the hemometer is used at frequent intervals.

ELLIOT P. JOSLIN, Ph.B., and FRANCIS P. DENNY, A.B., add the following description of

MAKING THE BLOOD-COUNTS.

In counting the blood-corpuscles the blood was taken from the ring-finger of the left hand which was held firmly for a few seconds to produce a slight congestion and pricked with a fine needle sufficiently to get a good drop of blood. It was diluted two hundred times with the following solution:

This was found much better than the five-tenths-percent. salt solution which is recommended. It has the great advantage of making the white corpuscles appear very refractive, so that the presence of one corpuscle in a field of red can be detected at a glance. This is of the greatest value in searching large areas while estimating the number of white corpuscles.

We counted the red corpuscles in one hundred of the small squares, selecting twenty-five squares in four different parts of the slide where the globules were most evenly distributed. In order to avoid counting any of the globules twice, those on the upper and lefthand lines of the squares were counted, while those on

the lower and right-hand lines were not.

All of the four hundred squares on the slide were searched for white corpuscles. In addition to this, following a suggestion of Dr. Richard Cabot, we estimated the number of squares which were included in the field of the microscope, and then, by moving the slide out in various directions from the centre, we could determine the number of white corpuscles over a considerable area outside of that which is marked off. In this way the equivalent of four thousand squares can be counted. Inasmuch as in a normal case there will only be three or four white corpuscles in the whole four hundred squares, the source of error is very great, and it is important to count a larger area.

The mixer was cleaned by washing, three times each with water, absolute alcohol and ether. To blow out the tube we used the compressed air which is employed by the throat specialists. The convenience of this method will be appreciated by those who have ever gone through the tedious process of blowing out the tube with the mouth. The bulb of the thermocautery can also be used, or even a Davidson's syringe; but neither of these are as good as the compressed air.

In some of the more severe cases of anemia we noticed marked changes in the appearance of the red corpuscles, and especially in their refraction. These changes have, in all probability, some significance which a careful observer, making a large number of counts and especially noting these changes, might determine.

Clinical Department.

A CASE OF CYSTIC DISEASE OF THE KIDNEY.

BY H. B. MCINTIRE, M.D., OF CAMBRIDGE, MASS.

Wm. J, born in Scotland, age about fifty years. By trade he was a stone and brick mason, until in 1878 he began candle-making, continuing the work until 1888, when he left it to carry on a small coal business and assist his wife in a small-goods store. He was a

large and muscular man, but was always a dyspeptic until six months before his death. During these six months, until the last three weeks, he could eat anything without distress, and was unusually well. His dyspepsia was at times associated with severe colicky pains in the epigastrium; and during one of these attacks, he was seen by Dr. J. A. Dow. Dr. Dow discovered a tumor in the left side of the abdomen. This was probably about two years before death. Not long after, he was first seen by me during one of these attacks of pain. The tumor was readily made out. This attack was similar to previous ones, and after two or three days in bed he was able to return to work. Again, in about a year, I was called, and found an effusion of blood in the leg, extending from the knee to the foot, probably due to some injury, as the previous day he had been engaged in some work on his knees.

I next saw him on April 23, 1890. He had been in his usual health since my last visit. On the day before, he had walked a great deal, and now had a swollen and painful ankle, and was covered with a pustular eruption (porrigo?). The rheumatism disappeared in a few days, and he was able to be about.

He again sent for me on May 3d, and stated that he was not getting his strength as he thought he should, nor was he able to sleep as formerly. questioning him, I found that for months he had been very sleepy, never sitting down for five minutes without falling asleep. There was slight swelling of the ankles, which first appeared with the rheumatism; there was also some puffiness under the eyes. The tumor in the left side had increased very much in size since first found, some two years or more before, and now crowded the intestines well over to the right. About two quarts of urine were passed in the twentyfour hours, of a specific gravity of 1,014. This contained a large trace of albumin, but no casts could be found. There were a few pus-corpuscles and epithelial cells from the bladder. From this time until the 11th, there was no decided change. The quantity of urine remained about sixty ounces in the day, the patient being about the house and out of doors.

On the 11th, I was called in the evening, and found him looking very ill. He was restless and excited. He complained only of his throat; this was very painful, and he swallowed with much difficulty. There were slight signs of inflammation, a little redness and some swelling of the uvula. He had slept poorly for

several nights.

On the morning of the 12th he was about the same. The urine had a specific gravity of 1,010, and contained a large trace of albumin; no casts could be found. That night he had a severe headache, was delirious and sleepless. At nine the following morning I found him comatose; at ten he had a convulsion, which was followed by a second at eleven, in which he died.

An autopsy was made by Dr. Holt. Upon opening the abdomen a tumor was brought to view occupying nearly all of the left half of the abdominal cavity, and was at once recognized as a cystic kidney. The weight was over eight pounds; and it was found to consist entirely of cysts of various sizes, filled with an amber-colored fluid. Not a trace of normal kidney tissue could be seen. Upon pressing the intestines to the left, the right kidney was brought to view, which was similar in every way to the left, weighing

¹ Read before the Cambridge Medical Improvement Society.

but one pound less. The two filled an ordinary water-pail. The other organs, so far as examined, were normal.

DISCUSSION.

Dr. McIntire remarked that there was very little written upon this subject, and that the most he found was in Roberts's text-book. Four varieties of the disease are found: one of congenital origin; another where cysts are scattered throughout an otherwise healthy kiduey; third, the cystic degeneration of amyloid kidney; and the fourth where there is a general change of the whole kidney into cystic formation, such as he has presented this evening.

Dr. VAUGHAN had one case during his service at the hospital - a theological student, twenty-four years old, tall, slight, and of poor health. He had practised medicine for a short time. There was a history of trouble with the urine and of an attack of hemiplegia. He rallied from the latter, and was up and about for three or four weeks, when he had a second attack and died. He had hematuria as a principal symptom, which disappeared during the attack of hemiplegia. Examination of the kidneys after death showed a condition like that described by Dr. McIntire, the whole mass having a honey-comb-like appearance, one kidney weighing six pounds, the other eight.

Dr. Currie had seen one case, the principal symptom being hematuria, and the course of the disease similar to those already described. The nature of the trouble was not recognized until after death.

Dr. A. P. CLARKE had a case in the early part of his practice — a young man about twenty years old, a clerk in Boston. He began to complain of trouble in his back, which grew steadily worse for two years, when he died. The kidneys were covered with large cysts, appearing like great blisters, and on section very little normal secreting surface could be found.

Dr. McIntire said that the disease is always bilateral, although it may be impossible to make out both tumors during life, and there is no chance of surgical interference.

Medical Progress.

RECENT PROGRESS IN THORACIC DISEASES. BY GEORGE G. SEARS, M.D.

FEEBLE PHYSIOLOGICAL RESPIRATION ON THE RIGHT SIDE.1

MONCORGE has noted twenty cases, free from all pulmonary disease, in whom respiration was feebler in the right lung than in the left. All of the cases were in the habit of sleeping exclusively upon the right side, and he therefore argues that its cause is found in the pressure exerted upon that lung during the eight hours of sleep preventing its proper expansion. The predominance of women, fourteen of the twenty cases being females, he attributes to the fact that her breathing is chiefly thoracic and, therefore, more seriously interfered with during sleep, while owing to her tight garments this pressure is constant, instead of being partly corrected as in man by the freer movements during the day. Her sedentary life also makes it more difficult that they are never found there, while Netter, who for her to compensate by day for the restricted move-

ment of the lung by night. With proper exercises he found it easy to correct this condition.

PULMONARY HEMORRHAGE.2

Gluzinski discusses at length the effects of hemorrhage upon the lung tissue. Clinically it is known that it gives rise to symptoms which can be recognized by physical examination (dulness, râles), which may either altogether disappear after a time, or become chronic, or be followed by an acute process, phthisis florida. In order to determine the pathological changes he made a series of experiments on dogs and came to the conclusion that effused blood in the lungs is by no means harmless. Twenty-four hours later reaction sets in which shows itself in a desquamation of the epithelium of the alveoli and the finest bronchioles and an out pouring of leucocytes, a peri-brouchitis. About the sixth day the lung becomes atalectatic, the peribronchial inflammation is more manifest and sometimes the desquamative pneumonia of Buhl results. In case the lung had been for a long time affected, for example, by adhesions or infiltration, the result would probably be more serious. He describes the conditions which are found in consumptives as a result of hemoptysis and criticizes the usual methods of treatment by rest and narcotics in severe hemorrhages, as having no influence in effecting the removal of a not indifferent foreign body.

THE PNEUMONIC FORM OF ACUTE PULMONARY TUBER-CULOSIS.

Fraenkel and Troje report thirteen very carefully studied cases of this form of tuberculosis, all of which occurred in men. In cases which run a very acute course it may not be possible to distinguish it from acute lobar pneumonia, but usually attention to the following points will establish the diagnosis:

(1) That there has been no critical fall of temperature, although the presence of diffuse crepitant râles on superficial observation gives the impression of a pneumonia in the stage of beginning resolution. remission of the fever takes place and resembles a crisis, it immediately rises again and progresses with marked variations of no distinct type. At times for several days the inverse type of fever is seen which is frequently noticed in tubercular affections.

(2) The frequent absence of any dyspnea or cyanosis, but a comparatively rapid increase in pallor of face and mucous membranes.

(8) The greenish color of the sputum and the recognition of tubercle bacilli in it. The latter, however, is not always easy, and in case of doubt they should be sought for with redoubled care.

(4) The presence of the diazo-reaction from the very beginning of the disease.

(5) The comparatively rapid loss of strength and deterioration in general condition, which do not correspond with the severity of the other symptoms, notably the absence of dyspnea and cyanosis.

PNEUMOCOCCI IN THE BLOOD.4

The presence of pneumococci in the blood has been denied by some observers, while others regard it as a very rare event. Even the latest contributors to the subject, for example, B. G. and F. Klemperer, assert

¹ Lyon Méd., No. 16, 1894.

Przegl: lekarski, 25, 1893; Schmidt's Jahrb., 1894, No. 7.
 Zeitschft. f. Klin. Med.. 1894, xxiv, Hs. 1-5.
 Schmidt's Jahrb., 1894, No. 3.

corroborates this statement, draws from it the conclusion that pneumonia in man is generally a local disease. On the other hand Casati, by better methods of examination, has proved that the diplococcus lanceolatus capsulatus was constantly present, not only in the blood of those who had died with the disease, but also that they could be regularly found in the blood of living patients even as early as the second day. In light cases, also, they are present without exceptions. Pneumonia is, therefore, to be considered not a local, but a general disease.

EARLY DIAGNOSIS OF PERICARDIAL EFFUSIONS.5

Ebstein says that the first change in the area of dulness in cases of pericardial effusion takes place not at the base of the heart but in the lowest portion. At first, there is an extension of the pericardial sac toward the left, which is, however, but seldom noticed, owing either to a coincident pleural effusion, or to the loud tympanitic note transmitted from the semilunar space. Soon after the pericardium is distended toward the right, and this is nearly always clinically demonstrated by the appearance of absolute, or nearly absolute, dulness in the fifth right intercostal space in the so-called cardio-hepatic angle. This sign is all the more valuable when it develops under the observation of the physician, since it cannot be then mistaken for other conditions which lead to its production. In the differential diagnosis between cardiac enlargement and pericardial effusion the absolute dulness in the cardio-hepatic angle is of value, because, so far as is yet shown, even by enormous enlargement of the right heart, dulness does not extend beyond the right sternal border between the fifth and sixth ribs.

DIASTOLIC MURMURS IN DILATATION OF THE HEART WITHOUT ARTERIAL INCOMPETENCE OR AURICULO-VENTRICULAR CONSTRICTION.6

Steell reports two cases which illustrate this condition, and says that he has learned from them "the lesson that even in the absence of aortic incompetence implicit confidence cannot be placed in a diastolic apexmurmur accompanied by thrill as a sign of mitral stenosis." He offers no explanation as to the origin of these murmurs.

The first case was a woman nineteen years old, who had suffered from acute rheumatism eight years before, and who died with symptoms of increasing cardiac incompetence. In the mitral area both a systolic and diastolic murmur were heard, the former being transmitted to the back, while the latter was accompanied by a thrill. A systolic murmur was also heard in the tricuspid, pulmonic and aortic areas. The second pulmonic sound was markedly accentuated. At the autopsy the pericardium was generally adherent, the heart enormously enlarged, with greatly dilated cavities. The tricuspid and mitral orifices admitted four fingers each. The mitral curtains were thickened, the chordæ tendineæ were hard and short, and there were vegetations on the auricular surface.

The other case was a man, aged twenty-three, without rheumatic history. A systolic murmur was heard at the apex and was transmitted into the back, a murmur similar in time being also heard in the tricuspid, sortic and pulmonary areas, while a distinct diastolic murmur accompanied by a thrill was heard at the

Virch. Arch., exxx, Hft. 3.
 Practitioner, April, 1894.

The autopsy showed a very much enlarged heart, the tricuspid and mitral orifices being greatly dilated. The mitral valves were thickened and indurated, but there were no vegetations. The aortic valves were competent.

HEART DISEASE AND PREGNANCY.

During the years 1891 and 1892, Vinay made a careful physical examination of the hearts of the 1,700 women who were admitted to the Maternity Hospital in Lyons, and found in 29 or 1.7 per cent., some cardiac lesion. Eleven of them were cases of pure mitral stenosis, while in seven it was complicated by mitral regurgitation, and in one by aortic insufficiency. Eighteen cases passed through pregnancy and labor without noteworthy symptoms, four had edema of the extremities, which was, however, probably due to varicose veins from which they also suffered. In only four did pregnancy exert any marked influence upon the cardiac condition, one of whom had hemoptysis, and one dyspnea with some serous effusion, while two, both twin pregnancies, had dyspnea and edema.

Labor came on at term in 24 cases, one being a case of twins, while of the five premature cases two were twins. Albuminuria, which he considers a symptom

of very grave omen, was present but twice.

Allyn's 8 figures give a much less hopeful prognosis in these cases, yet its gravity is probably considerably exaggerated by them owing to the source from which they are taken. He has collected, chiefly from literature, 72 cases of mitral stenosis, of whom 27 died before the puerperium was over, or so soon after that death could reasonably be attributed to the influence of pregnancy, the majority succumbing soon after delivery. Among the children there were 54 fatalities in 199 pregnancies recorded. Both authors would permit marriage and maternity under certain restrictions if the lesion is well compensated and there has been no history of previous symptoms of cardiac failure, but of the two Allyn is the more conservative, as he says that "the heart is certain to be worse for the pregnancy." Allyn lays special stress on the great amount of good which a timely bleeding may do before labor, and says that after delivery hemorrhage should be encouraged rather than checked. Abortion should be done when dangerous symptoms persist in spite of treatment.

Reports of Societies.

CLINICAL SECTION OF THE SUFFOLK DIS-TRICT MEDICAL SOCIETY.

HENRY JACKSON, M.D., SECRETARY,

REGULAR Meeting, Wednesday, March 21, 1894, DR. FREDERICK C. SHATTUCK in the chair.

A STUDY OF ANEMIA CASES, WITH THE AID OF THE HEMOMETER AND BLOOD-COUNTER.1

These cases were reported by Dr. Anna G. Rich-ARDSON and MESSRS. E. P. Joslin and F. P. Denny, and occurred in the service of Dr. A. K. Stone in the Out-patient Department of the Massachusetts General Hospital.

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¹ See page 183 of the Journal.

Sem. Méd. xiii, 1893, p. cclxxiv. Univ. Med. Mag., April, 1894.

DR. STONE: I want to speak of one or two of the clinical points connected with the paper. Before I do that I want to say that the paper to-night represents a great amount of enthusiasm and tact on the part of the readers - enthusiasm that meant the examination of four to eight cases a day with the hemometer, and staying two or three hours after a long clinic to do the blood-counts, and then later tact in following up the patients and getting them to come round so that the cases could be observed for six or eight months, making them of much more value than they would have been from the four months of the hospital service.

In regard to the diagnosis, we found that in all the men connected with the clinic, with two exceptions, the hemoglobin was fully 90 per cent., and in one case over 110 per cent. Of the two cases that were not normal, one was in a medical student who had had scarlet fever during the winter accompanied by an attack of nephritis, and the other in a man who indulged very extensively in the use of cigarettes. But the others, who were strictly temperate, and had been well, had the normal amount of hemoglobin. I speak of this because recently I have seen asserted that the normal amount (or 100 per cent.) at which the hemoglobinometre is gauged is too large, and that the real normal point is about 50 per cent.

A good deal of doubt is thrown on the value of blood-counts, since a small error in the count makes a large error in the result. From our experience, however, the same instrument in the hands of careful observers will give almost exactly the same results, and for that reason the instrument must be considered a

In regard to the diagnosis, which is one of the clinical points I wanted to speak of, I found that it was very difficult to make a diagnosis. Of course, in the case of the plump, yellowish-green girls, there was no doubt that these were chlorotic, and we got so we could guess within 10 per cent. of the amount of hemoglobin. But there were a large number who presented approximately the same symptoms - general malaise, headaches, palpitation, constipation, whose mucous membranes were pale, tongue flabby, and no good bright color under the nails - and who were apparently as thin-skinned as the rest, but on examination showed that they had a large amount of bemoglobin, that is, from 80 per cent. to 100 per cent., and it was astonishing to find the number that would at the first glance by almost any one have been passed off as simple anemia when they were not really anemic cases. What they are I have not been able to make out. Possibly they represent simply poisoning in some cases from the absorption from the rectum from the constipation, in some cases from excessive use of tea; possibly it is a pretubercular state, for we know that a large number of tuberculous patients look anemic and have a jaded appearance, but on examination have a large amount of hemoglobin, and it is only in the later stage that you get the hemoglobin wanting and the secondary anemia. It would seem that we should carefully go over such patients, and when we find that it is not a case of simple anemia that we have to deal with, to see if something organic cannot be determined as cause.

Another thing that was of especial interest in considering the cases was the fact that they did not get

of chlorosis affords one of the most brilliant instances of which we have but three or four - of the specific action of a remedy," and in the article he wrote on "Anemia and Chlorosis," in the "American System of Medicine," he says, "Chlorosis is one of the diseases of which the physician is a therapeutic master. A few weeks' administration of iron, together with improved hygienic conditions, suffices to restore the red glow to the most pallid cheek." I think this expresses the prevalent opinion.

I was talking with Dr. Thayer, of Johns Hopkins, with regard to this matter; and he said, from his observation at the Massachusetts General Hospital and his observation of patients as seen in Baltimore, that anemia and chlorosis were very much more severe in Boston than in Baltimore. He said further what Dr. Osler had written was an absolute fact, that patients taking iron, and being directed in regard to their manner of life, would entirely recover in two or three That has not been our experience. it is that the patients in Baltimore are a much more docile set of people, I don't know. He advanced the opinion that a large number of them were of German extraction, educated in obedience, and so quite willing to do exactly as was laid down for them; on the other hand, our Northern people are decidedly imbued with the spirit of liberty to such an extent that they feel they know as much as anybody who is directing them, and do about as they please, and possibly it may be we cannot control our patients in the same way they are able to do in the South. Another thing that Dr. Thayer suggested was, that the possibility of getting milk and eggs of an extremely good quality at a cheap rate might be another factor. In Baltimore you can get the best of milk for three or four cents a quart instead of six or eight cents here, and of a much better quality, and eggs are correspondingly cheap; so that a patient can for much less money be put on a rational basis, and that, together with the fact that they are willing to follow out directions, may be of importance in bringing about the difference in the results.

Another thing that has struck me is that a large number of our patients worry. They worry about losing their business. A large number of them are employed in stores. They have a pretty high standard of living, and they feel that the stopping of their salary is going to plunge them down. Then, too, the American and Irish-American girls who have made moral slips worry tremendously; and it seems to me that the New England conscience has much to do with their general condition.

One German writer, in speaking of the therapeutics, said that very often the iron was not assimilated, and that stopping the iron and giving sulphur for some time, and then changing to iron again, would frequently make a change in the condition of the patients, so that they would be able to get well much faster than on iron alone. I tried this in a number of cases; but as far as I could find, got no beneficial results. ever, there were no unpleasant results from digestive disturbance.

DR. THOMAS: In general, I think the results that they obtained at the Massachusetts Hospital last summer correspond very closely with those of my own work though I have not been able to follow up my cases very closely. Most of the cases I have seen, I have seen only once, and have not had the chance of well. Dr. Osler says in his Practice, "the treatment | making repeated clinical examinations. In those cases

I have been able to follow, I think I have had about the same results as Dr. Stone, that is to say, the

chlorosis did not get well quickly.

I think possibly the red glow of which Dr. Osler speaks may be one similar to that seen in chlorosis, the so-called chlorosis rubra, where the patient has the appearance of health, good color in the cheeks, and yet the corpuscles may be under the normal, and the hemoglobin still further reduced. The corpuscles seem to have been the first to return to normal and the hemoglobin last, and the return of the hemoglobin to normal is often delayed very long. A thing I have noticed in cases of this sort is that where the patient drops the treatment after two or three months, while the hemoglobin is at, say, 60 per cent., they are apt to come back in the course of the next half-year with a return of the symptoms; while most of the cases that keep on until the hemoglobin is 80 per cent. or in that neighborhood, have remained well permanently.

In regard to treatment, my own experience has been that Blaud's pills and tincture of the chloride of iron and other forms of iron answer as well as anything we have found. Sulphur, I have not tried myself. own impression is that its chief use is from its effect on

the bowels.

In regard to the counting, I think the suggestion Dr. Cabot made of estimating the number of squares in the field of the microscope, and counting out a certain distance on each side of the ruled space to enable one to cover enough ground to take in a fair number of white corpuscies, will be found to be useful in practice; of course, it cannot be accurate. It is more or less an estimate of the relative proportion of the white One can make fairly accurate estimates from this method. I want to emphasize the fact that I think for any accurate results we must have a separate count of the white from the red. We must use a solution which dissolves the red corpuscles and make a count of the white cells separate from the red ones. For clinical purposes the other method will be very useful.

DR. CHADBOURNE: I am sorry not to have been able to hear the papers that have just been read, and I hope that you will excuse me if I unintentionally repeat what has been already spoken of. I should like to say something about the methods of examining the blood for clinical purposes; not in any way as a criticism of what has been reported, but only as bearing on the general subject. First, as to the quantitative test for hemoglobin with the Fleischl apparatus. In using this color test it is well to bear in mind that the following causes may, any or all, influence the result, though not to the same extent:

(1) The individual equation of the person who makes the test is, as is well known, most important.

- (2) The kind and intensity of the light used, and also the level at which it is placed in relation to the reflecting "mirror" should not vary. To obtain the best results the light should be on the same plane as the mirror, as otherwise the same intensity of light does not reach the two chambers, though often the difference cannot be recognized without special tests.
- (3) All direct light should be cut off from above the stage, and this is easily done by using a cylinder of blackened paper to look through.
- (4) The test should be made looking in the line of the partition between the cells, not across them, and only one eye should be used.

- (5) As soon as the blood has been secured, it should be at once examined, as in certain cases the mixture becomes opaque in a short time.
- (6) For the most exact results the examinations that are to be compared should be made at the same hour of the day, and with due regard to the fact that digestion, exercise, the catamenia, sufficient food, change in body weight, etc., all influence the amount of hemoglobin. Thus, in fasting animals, the hemoglobin is increased, while with a return to full diet and gain in weight, it grows less.

(7) If the blood is collected with a Leif's pipette for counting red corpuscles, the quickness, ease of accurately filling and emptying, as well as the certainty of removing any blood that may be on the outside of the tube must be much greater. A further argument for the pipette is that a certain proportion of the capillaries do not hold exactly the standard amount of blood.2

. The Fleischl method is a convenient and, for most purposes, a sufficiently accurate test of the amount of coloring matter in the blood, and, as a rule, probably of the hemoglobin also; but we must not overlook the fact that, as has been maintained by Beinecki and others, there are certain albuminoid substances that also affect the color of the blood, and that any hemoglobin outside of the corpuscles would be included in the Fleischl estimate. Most authors agree, however, that this possible error may be disregarded for practical use. On the other hand, it is said,4 that in a considerable proportion of cases the amount of hemoglobin does not correspond to the color tests.

As to "blood counts" much is learned from counting, not only the number of white cells, but also the relative number of the different varieties. This can be done either by a count of the total white cells with the Leif's apparatus, and a subsequent count of the different varieties from a stained specimen to give the relative percentage of each kind; or it may be made with considerable accuracy by using a mixing fluid that will stain the nuclei of the white corpuscles. objection to the latter method is that the stain is necessarily weak, and some hours must elapse before the nuclei are distinctly colored.5

Neusser bases his classification of cases of chlorosis and also of anemia on the kind and relative number of the different varieties of white corpuscles. He recognizes a "myelogenous" form of these diseases, characterized by large numbers of the kinds of white cells that originate in the bone marrow; and such patients are found to react well to iron, the recovery being rapid and the prognosis good. The "lymphatic" variety shows a marked increase in the lymphocytes, but the myelogenous cells are not seen in numbers,

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² This I have tested with eighteen capillary tubes bought at the same time as the instrument. The same blood was used for each test, every tube was tried six times, and each was handed to me by an assistant, so that it was impossible for me to tell one capillary from another. Three Leif's pipettes were used as controls, each being tried thirty-three times, with the same precautions as in the case of the capillaries. The results with the same capillary never varied more than five per cent., while the maximum variation in the eighteen capillaries was nearly twenty-one per cent. The variation in the estimates with the same pipette were but little over two and one-half per cent, certainly less than five per cent., and between the three pipettes the difference was not five per cent. in any of the one hundred and eight estimates. (These tests have been made since the meeting of March (?), but are mentioned here in proof of the statement referred to.)

³ Weiner Klin. Woch., v, 1892, p. 62.

⁴ Beinecki, loc. cit.

⁵ Solson's solution gives good results. It consists of: Neutr. gly-

Solson's solution gives good results. It consists of: Neutr. gly-cerine 30, sodium sulphate pur. 8, sodium chloride 1, distilled water 100, methylene violet 0.125.
 Wiener Klin. Woch., v, 1892, p. 65.

and the prognosis is not good. This form is generally found to be but little helped by treatment and the patients are often tubercular.

For the white corpuscles and eosinophyll cells the suggestion made by Dr. Cabot is a great help and

very simple.

For cleaning the pipettes a mixture of bichromate of potash, 40 grammes; sulphuric acid (concentrated) 30 c. cm., and water, 150 c. cm; will remove all organic matter. It will also remove the rubber tubing should it come in contact with it.

Dr. Shattuck: The paper of the evening represents an immense deal of work and there are some results that are surprising and interesting to me. This lack of correspondence between facies and the results of the blood examination is somewhat upsetting, because we have been accustomed to believe we could make a diagnosis of anemia with the naked eye pretty well. With regard to the curability of cases of chlorosis I have been struck with the same difficulty which the readers have, that some of them are very obstinate even when put under good circumstances. I have had several cases in the hospital this winter where they were removed from worry, given the best food they could have, the largest amount they could digest; and the improvement has been slow, and in some cases trifling. I have whenever I could this winter followed the plan of Dr. Forchbeimer of treating chlorosis by salol or betanaphthol rather than by iron. The results of his experiments would seem to indicate that the hemoglobin is deficient in cases of chlorosis on account of its destruction in the intestinal canal, and that by using intestinal antiseptics the proper amount of hemoglobin gets into the blood more rapidly than under iron. My results have not coincided with his as far as they have gone; but my number of cases is so small that I speak with some diffidence on the matter. I have had cases improve in the wards this year under his tracheotomy instruments; but when he arrived he iron and arsenic which did not gain under the intestinal antiseptic treatment.

What Dr. Stone said about Dr. Thayer's remarks on the difference between chlorosis in Boston and Baltimore is interesting, and reminds me of another thing which Dr. Thayer said to me, namely, that gastric ulcer is a very rare disease in Baltimore, while here it is so common in our hospital wards. He says they can hardly get a case to demonstrate. We recognize the association which there is between anemia and gastric ulcer, and there is another factor which perhaps enters into the curability of the Baltimore chlorosis, namely, the fact that they have no tenement houses in Baltimore. Land is cheap and each family has its own house.

DR. VICKERY: I should like to ask the size of the doses of iron given.

DR. STONE: We began usually with one Blaud pill (the smaller form), increasing at the end of about each week until we gave three three times a day. In giving the saturated oxide of iron, we gave five to ten grains three times a day.

DR. VICKERY: I feel confident from my own experience that a five-grain Blaud's pill three times a day does not amount to much. From ten grains up, I think, is right. I have heard a chlorotic murmur in a patient with tubercle bacilli. It was a young girl had not been reasons for careful examination. It has

been said that if you get a murmur in the neck of a young woman whom you fear may be going into consumption, you can feel comfortable about her, but it was not so in this particular patient. Some of the most anemic looking women I have seen at the outpatient department were uterine cases, and the treatment of their pelvic troubles improved their blood fully as much as any medicine. I have been struck by the continued improvement with the continued use of iron. I remember one young woman who was very nervous, hysterical and also frail, whom I started on Blaud's pills, and told her, as I regularly do, that she would have continual benefit from the remedy if continued a long while. I did not see her for about six months, and she looked like a picture of health.

CASE OF DEATH DUE TO THE INHALATION OF VOMITUS IN A STRONG AND HEALTHY CHILD, AGED THREE AND A HALF YEARS.

DR. PRESCOTT: I wish to report a case which occurred in the practice of Dr. W. M. Conant, and which is reported from its rarity, having in casually looking through the records found no case similar to it in a child of the same age. A strong, healthy girl, between three and four years of age, was perfectly well up to dinner-time. She ate very heartily, the last thing being an orange, swallowing not only the juice but the substance. About two hours after dinner she complained of feeling "heavy in her stomach and sick all over," and was told by her aunt to go and lie down. She went into the next room, and that was the last time she was seen alive. In about twenty minutes some noise in the room attracted the aunt's attention; and going in, she found the child struggling and black in the face. She immediately put her into hot water, slapped her back, and sent for Dr. Conant. He hurried to the house with found that the heart had ceased to beat, so he only cleared out the mouth and the pharyux. I made the autopsy four hours after death. The child was very well developed. The skin everywhere was pale, except the lips, which were blue; everything seemed rather dry. There was nothing abnormal found except in the lungs, trachea and bronchi. The mouth, as I said, had been cleared out. The pharynx and larynx were nearly free of all foreign material, there being only a few particles of orange in the pharynx and about the larynx. On opening the chest, the lungs were found voluminous, and did not retract at all. They were pale. There were no subpleural ecchymoses, and no ecchymoses or anything abnormal about the heart-The trachea was filled with what looked like the yellowish-white material of the solid part of the orange, and this same material also filled both main bronchi, and even down to the fourth and fifth divisions of the bronchi. The extraordinary part of the case was the extent to which the material had been sucked into the bronchi, and the fact that there was no general cyanosis. On microscopical examination of the lung, which was injected with alcohol, as far as it could be under light pressure, some of the alveolar walls appeared to be torn, but whether that was done in hardening and cutting or not, I could not make out, but it seemed as if some of the tears were made by who would have passed for a case of chlorosis if there the efforts at expulsion. The foreign material could easily be demonstrated in the small divisions of the bronchi.

'ee the Journal, March 22, 1894.

A CASE OF DEATH FROM ACUTE, PURULENT PERITO-NITIS. DUE TO SEPSIS CAUSED BY TAPPING THE SAC OF A SCROTAL HERNIA.

Another case I wish to speak of was that of a man about fifty-three years of age, who had been sick a number of years and had been under the care of many physicians. He was told in the beginning, by Dr. Whittier, that he had a fatty or weak heart. He was then seen by Dr. Wesselhoeft, who told him he had trouble with his kidneys. He was seen by a number of men in the next year, and one thought his heart was diseased, and one thought his kidneys were the seat of the trouble. He was troubled a good deal with ascites and dyspnea on exertion. Finally, Dr. Whittier saw him again, and told him he could do nothing more for him. Then he consulted Dr. Blank. He was then bloated very much, and Dr. Blank said he could cure him. He gave him a pill, and the ascites seemed to run right away from him. Within a week he was able to be up and about; but the fluid soon began to reaccumulate, and he had, in addition, swelling of his ankles, scrotum and penis. He had had a hernia for years. After about two months or more of treatment at Dr. Blank's private hospital, he came home apparently to die; but Dr. Blank came and tapped his scrotum. Evidently the trocar was put into the cavity of the hernia, the gut having been returned to the abdominal cavity. The reason for thinking this was the way the water came out. There were nearly three quarts of water withdrawn from the scrotum. That was Thursday night. Friday he was worse, and had a severe chill with abdominal tenderness, grew rapidly worse, and died Monday, four days after the tapping. I did the autopsy that afternoon, and found that the man had a fatty heart, contracted kidney, chronic nephritis with the interstitial element predominating, and cirrhosis of the liver; but that the immediate cause of death (and the thing that led me to report the case) was an acute fibrinous peritonitis due to sepsis following the puncture with the trocar in the scrotnm.

I am indebted to Dr. W. M. Conant and Dr. E. N. Whittier for the clinical histories of these cases.

Dr. SHATTUCK: The second case reminds me of one I had in the hospital some years ago. The scrotum was distended with ascitic fluid, and twice the scrotum was tapped to drain the peritoneal cavity. There were no evil effects, but the procedure in this case did not seem to have any advantage over abdominal paracentesis.

THE AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

EIGHTH ANNUAL MEETING, WASHINGTON, D. C., MAY 29, 30, 31 AND JUNE 1, 1894.

FIRST DAY. -- TUESDAY.

Dr. George Chismore, President, in the chair.

MODIFICATIONS OF BIGELOW'S OPERATION STONE IN THE BLADDER, DESIGNED TO MEET CASES IN WHICH THE PROSTATE IS ENLARGED.

Dr. George Chismore, of San Francisco, read a paper on this subject. He stated that the difficulty of clearing the bladder of a stone by Bigelow's

and character of the encroachment upon that viscus by senile enlargement of the prostate gland. The modifications of the classical operation suggested by the author were as follows:

(1) Substituting local for general anesthesia in

cases where an anesthetic is required.

(2) Short sittings. Continue crushing only so long as fragments can easily be found. Wash out the pieces, and stop the moment symptoms of exhaustion, spasm of the bladder or unusual distress occur.

(3) Remove remaining pieces, after symptoms due to previous operation have subsided, as soon they can be felt by the searcher - usually within a week and repeat the process until the bladder is cleared.

When a patient presents himself for treatment with senile enlargement of the prostate and a stone, he is usually dependent on the catheter - has catheter stricture - and requires a course of dilatation of the urethra preliminary to attacking the calculus. As soon as a sixteen or eighteen Van Buren sound will pass, Dr. Chismore seizes the first favorable opportunity and operates on the patient in his office. The bladder is emptied, and from one to two fluid ounces of a four-per-cent. solution of cocaine muriate injected; the lithotrite is then gently inserted, and the stone seized and crushed. If, during this procedure, he becomes aware that quite a large fragment has apparently vanished, he makes no prolonged attempts to find it. It is perhaps in some pouch, or lying in a fold between two projecting knobs of the prostate, or firmly imprisoned in a deep sulcus formed by the bladder wall doubled upon itself by the intruding gland; in any case, it is entirely beyond the reach of instruments, and there it will remain until it becomes slippery with mucous membrane, or in some other way dislodged. When no more pieces can be found, the lithotrite is removed, a catheter as large as will pass is inserted, and the bladder washed with a warm borated solution, until the fragments cease to come. The patient is then sent home, with orders to keep quiet. In the great majority of cases operated on in this way, there are no after-symptoms; the patient is better at once. In 52 cases reported by the author, the youngest was fifty-one years old; the eldest, seventy-four; average, 66.36 years. There were 22 phosphates, 24 oxalates, 5 urates, and 1 mixed oxalate and urate. The smallest stone weighed, dry, 7 grains; the largest, 1,000 grains; average weight, 149 grains. There were no deaths, and no serious complications attributable to these operations.

In connection with this paper, Dr. Chismore presented a number of instruments and specimens.

DR. L. BOLTON BANGS, of New York, said he was much interested in Dr. Chismore's paper, particularly in that part which referred to performing the operation under local anesthesia. The class of patients in whom this operation is called for are especially susceptible to the secondary bad effects of general anesthesia, which is apt to produce congestion of the kidneys, or even actual inflammatory changes

DR. FRANCIS S. WATSON, of Boston, said that, were it not for the fact that Dr. Chismore presented such a strong array of figures, he would feel inclined to regard the method of operation recommended by him as a distinctly retrograde one. The Bigelow operation has its chief value in the fact that none of method increases in direct proportion to the amount the fragments are left behind, and the high mortality

following lithotrity in former times was due, in all probability, to the presence of such fragments. He did not see why this should not be so in Dr. Chismore's cases, where a large fragment was often left in the bladder. In cases where the hypertrophied prostate offers serious difficulty to the passage of the evacuating tube through the deep urethra, Dr. Watson said he was in favor of making a perineal incision, dilating the deep urethra, and then rapidly crushing and evacuating through the opening thus afforded. By this procedure we obviate the danger of injuring the deep urethra; death in old men is usually due to injury in this region.

DR. W. K. OTIS, of New York, said that in cases where the prostatic enlargement is considerable, he felt inclined to favor the suprapubic operation, for the reason that it enables one to entirely empty the bladder of stone; furthermore, the prostate itself can be operated on at the same time, if it is deemed advisable, and the bladder drained.

Dr. John P. Bryson, of St. Louis, said he was fully in accord with the statement made by Dr. Watson regarding the bad effects that are apt to follow instrumental manipulation of the prostatic urethra in these cases. In cases where the stone formation is secondary to bladder inflammation, associated with a certain amount of inflammation of the prostate, he considered it advisable to drain the bladder.

DR. JAMES BELL, of Montreal, said he was surprised to learn that Dr. Chismore was in the habit of injecting such large amounts of cocaine into the bladder without producing dangerous results.

DR. EDWARD MARTIN, of Philadelphia, said that, in view of the fact that chloroform has lately been shown to be even more irritating on the kidneys than ether, the employment of local anesthesia in these cases is of great practical importance.

Dr. Samuel Alexander, of New York, said that in patients with enlarged prostate, and thickening and hypertrophy of the bladder, with excessive irritability of that organ, it appeared to him that the partial removal of a stone and the leaving behind of a fragment would be exceedingly disagreeable, if not dangerous.

DR. WILLIAM JUDKINS, of Cincinnati, said he had employed cocaine in much smaller quantities than those mentioned by Dr. Chismore, and in some instances quite alarming results had followed.

Dr. L. Bolton Bangs, of New York, said that by the suprapubic method the bladder can be best drained, and that operation is certainly indicated in some instances; in others, some modified form of operation is better. After making the perineal incision, he has in some cases stretched the prostatic urethra, so as to gain ready access to the bladder.

Dr. Chismore, in closing the discussion, stated that since June, 1889, he had invariably used local cocaine anesthesia in operating for stone. In a small proportion of these cases mild toxic symptoms, such as nervousness, etc., were observed; but these were never sufficiently pronounced to induce him to suspend the operation or discard the use of the drug. In patients with prostatic enlargement, the bladder is far more Fla. This case was almost a hopeless one of prostatic tolerant than in young persons, and a fragment of hypertrophy, with marked sepsis, cystitis, beginning stone left behind does not give rise to much incon- uremia, etc. Double castration was performed; and venience. A person is no safer from recurrence of stone after suprapubic cystotomy than he is after litholapaxy; and the latter is certainly by far the symptoms of cystitis or other urinary trouble. simpler and easier of the two operations.

A SUMMARY OF THE HISTORY AND PRESENT POSI-TION OF THE OPERATION OF CASTRATION FOR HIPERTROPHY OF THE PROSTATE.

by Dr. J. WILLIAM WHITE, of Philadelphia.

The author stated that a series of experiments on dogs have been made under his direction, with the view of determining whether or not castration would be followed by notable atrophy of the prostate. The idea that this was possible was suggested to him by the comparison long ago made by Valpeau, and after-wards by Sir Henry Thompson, between the prostate and uterine fibromata. In these experiments the first castration was done January 27, 1893; the others followed at intervals of a few days, and the results showing rapid atrophy, first of the gland, and then of the muscular elements - were very decisive. The line of argument, theoretically, is as follows: The prostate, while not embryologically the true homologue of the uterus, is developed from structures quite distinct from those which form the urinary passages. The structure of the prostate and of the uterus is strikingly similar. Its growth is in direct relation to the sexual life of the individual; its overgrowth occurs at a period when the sexual life is fading out, but is usually not extinct.

The reproductive powers of life end sooner in the female than in the male; accordingly we find fibromyomata appearing earlier in the former than in the latter. The histology of the growths are markedly alike in the two sexes. The uterine tumors do not appear after the menopause, or, if present already, undergo atrophy. After a certain period of life there is no increase in the tendency to enlargement of the prostate, but rather the reverse. In the female oophorectomy causes the disappearance of these growths and atrophy of the uterus itself. Castration almost certainly has the same effect upon the normal prostate.

The fact that we have no examples of spontaneous shrinkage of the hypertrophied prostate in old age, may be explained by the great frequency with which the trouble causes death in such cases. Messer's and Desnos's observations go to show that, after a certain period of life, the frequency of notable hypertrophy diminishes; and they suggest the possibility that in many cases physiological atrophy had already begun. Uncertainty as to the exact duration of the sexual life in the male also weakens the force of the statement that the condition does not manifest itself until after the period of life when it should occur if it were truly homologous with the uterine growth. In addition, it may be said that there is accumulated evidence that prostatic hypertrophy begins, much more frequently than was formerly supposed, during middle-life.

Dr. White then referred to a number of cases reported by Dr. Francis L. Haynes, of Los Angeles, Cal., who had three times performed double castration in old men afflicted with prostatic hypertrophy. In all these cases the operation was followed by very satisfactory results. He also referred to a case reported by Dr. F. Freemont Smith, of St. Augustine, within fifteen weeks after the operation the patient gained forty-five pounds in weight, and had no further

On January 1, 1894, Dr. White operated on a man

aged sixty nine, who had a very large prostate, onehalf the size of an orange. He had passed no urine excepting by the catleter for years. His urine was loaded with mucus and extremely offensive, and at intervals it contained blood. Double castration was per- their virility. formed, and at the present time, about four months after the operation, while the patient does not urinate spontaneously, rectal examination shows a reduction of the prostate to about its normal dimensions. catheter, which it was formerly necessary to introduce nine and one-half inches before reaching the bladder, now goes in only about eight inches when the urine begins to flow. Its introduction is easy and painless. No blood has appeared in the urine for two months. The urine itself is entirely normal in every respect.

In conclusion, the author said that the above and other cases that have been reported certainly establish the claim of the operation to further and more extended trial, and show that, even on the basis of experiment and theory alone, he was justified in suggest-

ing it to the profession.

DR. BANGS said that any means whatsoever which promises some relief to this class of cases is certainly worthy of attention. In many of these cases longcontinued drainage will achieve very good results. the enlargement of the prostate is dependent on the activity of the testes, why not ligate the vessels of the organs instead of performing castration?

Dr. Bryson said that in one case of hypertrophy coming under his observation, double castration was performed, owing to the fact that both the glands were involved by tubercular disease. Their removal was followed by a distinct improvement in the man's symptoms, and there was a marked diminution in the fre-

quency of his uriuation, especially at night.

DR. BELFIELD, of Chicago, said it has long been known that castration will produce atrophy of the normal prostate. We must bear in mind, however, that in the enlarged prostate we have certain elements or conditions which are not found in the normal organ, namely, the growth of fibrous and adenomatous tissue, or a mixture of both; and it is a question whether these elements are affected by the cessation of sexual portant advance over the older method of biting or

DR. WATSON said that in two cases coming under his observation, atrophy of the prostate on one side was produced by destruction of the corresponding testis, due to suppuration. In both of these cases the prostate had been enlarged for years.

DR. MARTIN said that in the case reported by Dr. White, there had been a truly remarkable change pro-

duced in the size of the prostate.

Dr. ALEXANDER W. STEIN, of New York, said that the bladder in these cases is not always relieved by simply removing the mechanical obstruction at the neck. Owing to the cystitis the bladder becomes insensitive, and is entirely unable to empty itself.

Dr. ALEXANDER said he recently saw three cases of double, undescended testes, in which the organs were removed and were found to be atrophied. In two of tissue removed and the death-rate. the cases the testes were fibrous, and no healthy spermatozoa were found in them. In all of these cases a rectal examination failed to reveal that the prostate | gland with good results. was diminished in size.

Dr. Belfield said he had seen two cases of unilateral, undescended testis, with pronounced atrophy, and atrophy of the prostate on that side.

that has been reported, the man had full sexual powers, and was convicted of bastardy.

Dr. Bryson said the testes may be concealed, and yet have that nervous connection which will maintain

DR. WHITE, in closing the discussion, said that in Dr. Smith's case he did not think that drainage of the bladder could have been employed with any prospect of success, nor could he recall any case in which drainage alone has given results comparable with those obtained by the removal of the testes. Tying the vessels of the testis is apt to be followed by necrosis of the

A SUGGESTION AS TO THE REMOVAL OF ADENO-MYOMATOUS GROWTHS FROM THE PROSTATE.

Dr. Samuel Alexander read a paper on this subject, in which he called attention to the various methods which have been employed for removing prostatic hypertrophy, and stated that he favored the double incision, as recommended by Belfield. The modification suggested by Dr. Alexander consists in removing the obstructing portions of the enlarged prostate by enucleation, after stripping up the mucous membrane from the submucous tissues by means of the finger passed into the perineal opening. In one case reported by the author, the patient was fifty-three years old, and gave a history of prostatic obstruction of two years' duration. The bladder was opened above the pubes, and a perineal incision was made, extending as far as the apex of the prostate. The mucous membrane of the prostatic urethra was stripped up, and the adenoid growths removed with the prostatic forceps through the lateral opening.

The advantages claimed by Dr. Alexander for this method were that the mucous membrane remained intact; that the chances of hemorrhage were greatly diminished; that the prostatic sphincter was preserved; and that the entire obstructing portions of the prostate

could be removed with greater ease.

Dr. Watson said that the operation of enucleation in reducing the size of an enlarged prostate is an imchewing away the projecting masses. It would be interesting to know in what proportion of cases enucleation is possible. Dr. Watson said he still employs the Peterson bag in these operations, for the purpose of pushing the bladder firmly against the abdominal wall.

Dr. Belfield said that Dr. Alexander has carried the enucleation process to a much greater and more successful issue than any who have preceded him. He has also been more systematic in removing the mucous membrane, so as to make enucleation possible.

Dr. J. WILLIAM WHITE said that in all these discussions about operations on the prostate, no mention is made of how little we may take away from the gland with resulting benefit to the patient. There seems to be a direct ratio between the amount of gland

DRS. WATSON and BELFIELD stated that they had in some instances removed very small portions of the

Dr. Bryson said he had noticed on several occasions that the source of the severe bleeding in these cases was the mucous membrane and the sub-mucosa. He did not see how the amount of tissue removed could Dr. Bangs said that in one case of cryptorchidism materially affect the mortality. He still employs the Peterson bag, and has never performed a prostatectomy without it.

Dr. James Bell, of Montreal, said that in his experience the fatal results after prostatectomy seemed to be due to some form of toxemia, rather than to hemorrhage.

Dr. ALEXANDER, in closing the discussion, expressed the opinion that the mortality-rate bears little or no relation to the amount of prostatic tissue re-Of more importance in this respect is the condition of the kidneys and the upper urinary tract.

REPORT OF SOME CASES OF RUPTURE OF THE URETHRA,

by Dr. Francis S. Watson, of Boston.

The first case reported was a sailor. Fifteen days before coming under observation his penis was struck by the handle of a wedge, rupturing the urethra midway between the meatus and the peno-scrotal angle. The integument externally was not ruptured. On first attempting to urinate, a small amount of water passed through the meatus. Subsequent to this he was unable to pass any urine, which collected underneath the skin, forming an artificial bladder. A few days after the accident inflammation set in, with perforation of the distended sac, and the urine made its exit through two openings to the right of the symphysis, above Poupart's ligament. In this condition he came to the hospital. Dr. Watson said the operation he performed consisted in draining the artificial bladder and performing perineal section, in order to avoid contact of the urine with the injured urethra. The urethra was then cut down upon and repaired. The man made a good recovery; and at the present time a No. 29 sound can be passed into the bladder.

Four other cases of rupture of the urethra were reported by the author; in all of these the injury was received during coitus. In one of them the accident was followed in a few days by extensive infiltration of urine and gangrene of the entire skin of the penis. Skin-grafting by Theirsch's method was employed, and very good results obtained.

REMARKS ON THE TREATMENT OF CYSTITIS.

Dr. GARDNER W. ALLEN, of Boston, read a paper on this subject, based on the records of a number of cases which have come under his observation during the past eight years. Many of these cases were of gonorrheal origin, and in nearly all the inflammation was confined to the neck of the bladder. Extension backward of gonorrhea into the neck of the bladder, accompanied by a sharp onset of urinary symptoms, is, of course, common enough. In non-gonorrheal cases the cause of the cystitis is not always clear; but in a certain number it is apparently traceable to a posterior urethral catarrh resulting from congestion of the prostatic portion, with or without inflammation of the seminal vesicles, and brought about by prolonged and repeated sexual excitement. It begins insidiously, has little or no tendency to recovery, and is apt to prove intractable to treatment.

As regards the treatment of cystitis, Dr. Allen said that of the various internal remedies he preferred the saline diuretics, especially benzoate of soda. Few surgeons nowadays, however, would long defer local treatment of the disease. For the simple purpose of years. (2) To give the most complete epitomization washing out the bladder, perhaps a saturated solution of boric acid gave on the whole the best results. For

the mucous membrane of the vesical neck, the author said he had had very gratifying experience with nitrate of silver and permanganate of potassium. nitrate of silver, he rarely goes beyond a one-per-cent. solution, injecting from ten to fifteen minims. The injections appear to be more effectual if preceded immediately by the passage of a large sound, excepting in the more acute cases. Permanganate of potassium he has found to be very efficacious in cystitis and chronic prostatitis. Where it fails, nitrate of silver often succeeds, and vice versa. The bladder should be thoroughly irrigated with the permanganate solution (1-4,000 to 1-5,000), and this is conveniently done by means of a large Ultzmann syringe, connected with an elastic or soft-rubber catheter. One syringeful at a time is injected, and allowed to flow out again; and this is continued until the solution comes away with its color unchanged. Then two or three ounces are injected, and left in the bladder as long as they can be comfortably borne.

Dr. Allen then detailed the histories of a number of cases of cystitis coming under his observation.

DR. BRANSFORD LEWIS, of St. Louis, said that in his experience, none of these various remedies memtioned by Dr. Allen can be depended on in every case. In some instances the benefit derived from their use is not observed until after they have been discontinued.

Dr. Martin stated that the new antiseptic remedy, tri-cresol, promises to be very useful in this class of It is a powerful antiseptic, and causes very slight irritation.

(To be continued.)

Recent Literature.

An Illustrated Dictionary of Medicine, Biology and Allied Sciences. Including the Pronunciation, Accentuation, Derivation, and Definition of the Terms used in Medicine and the various Sciences closely allied to Medicine. By GEORGE M. GOULD, A.M., M.D., editor of "The Medical News," President (1893-1894) of the American Academy of Medicine, etc. Philadelphia: P. Blakiston, Son & Co. 1894.

THE past year has seen the publication of many medical dictionaries of various sizes, some enlarged revisions of well-known books, others entirely new. Books of this latter class naturally need justification for their appearance. An author, in presenting a new dictionary to the medical public to-day should have definite purposes, other than publication, and should be consistently thorough in his accomplishment. Both of these requirements have been amply filled by Dr. The rapid growth of new sciences has filled Gould. medical literature with so many new words and terms, that the actual need of a dictionary based upon a new comprehension of medical science has been long apparent

Accordingly, Dr. Gould proposed the following specific desiderata for his work: (1) The inclusion of the many thousands of new words and terms that have been introduced into medicine during the last few of the works of older and authoritative lexicographers. (3) To include all the more commonly used terms in the purpose of producing a decided impression upon biology — a most desirable and but poorly filled need in

other dictionaries. (4) Keeping the size and purpose of | Pyogenic Infective Diseases of the Brain and Spina the book well in mind, to give it an encyclopedic character, not only by supplying the usual pronunciation, derivation, and definition of the words, but also by showing their logical relations, their bearings, and their practical importance for the worker in literary or clinical medicine. (5) When advisable, to give a pictorial illustration. (6) To cast the influence of the work, in doubtful or disputed cases, in favor of a more consistent and phonetic spelling. (7) To indicate the best pronunciation of words by the simplest and most easily understood method.

All of these purposes have been admirably carried out. So far as the test of daily use has been made no word has been found wanting, while the arrangement of biological and bacteriological terms gives the great-est satisfaction. The wide extent of the fourth proposition has been most surprisingly well carried out. The volume is of a size to be easily used, and contains but 1,630 pages; vet within that space is epitomized, and that without any sacrifice of clearness, a larger amount of information than in any other similar book we know. Much of this is accomplished by the judicious and skilled use of tables which at once economises space and makes comparison easy. Besides the ordinary tables of muscles, nerves and arteries, there are several deserving of especial mention, such as the tables of stains and tests, giving the names and agents employed, as well as the methods of application The table of named operations is of and reactions. particular excellence, while the long tables of parasites and bacteria, which fill forty-three and thirty-two pages respectively, are probably the most complete lists A special index for ready reference ever published. to the tables shows a list of considerably over one hundred of these collections of tabulated facts.

The illustrations are exceptionally clear, and are used with discretion so as to be of considerable help. The spelling is in accord with Dr. Gould's advanced position towards phonetic spelling reform. the methods approved by Skeat and Whitney, and sanctioned by the Association for the Advancement of Science. Both spellings, however, are given of words

in dispute. The mechanical execution of the book leaves nothing whatever to be desired. Both Dr. Gould and the entire medical profession are to be congratulated on the completion of so useful and excellent a dictionary.

Antiseptic Therapeutics. By Dr. E. L. TROUESSART. Translated by E. P. HURD, M.D. Two volumes. Detroit: George S. Davis. 1893.

The rapid advance during the past few years in our knowledge of bacterial and physio-chemical causes of disease, and the consequent change in therapeutic methods, make these volumes of Dr. Trouessart exceedingly interesting to the general practitioner. In a few pages he has brought together the tested facts of antiseptic preparations in such form as to be readily accessible to the busy physician. In the multiplicity of new antiseptic remedies such a work as the first volume is of great help. The second volume, dealing with the methods of treatment and formulæ which belong to the antiseptic therapeutics of particular discases, is equally readable and suggestive; though in a few instances the author's enthusiasm has led him to claim results as due to antiseptic action which are quite as readily explained by less organic means.

Cord. By WILLIAM MACEWEN, M.D., Glasgow. 8vo. pp. xxiv, 354. With sixty-one illustrations and sixteen temperature charts. New York: Macmillan & Co. 1893.

Atlas of Head Sections. Fifty-three engraved copperplates of frozen sections of the head, and fifty-three key plates with descriptive texts. By WILLIAM MACEWEN, M.D. Quarto. New York: Macmillan & Co. 1893.

"THE prognosis is always doubtful and usually unfavorable." "An uncomplicated cerebral abscess, whose position is clearly localized, if surgical measures are adopted for its relief at a sufficiently early period, is one of the most hopeful of all cerebral affections." But twelve years have passed since Wernicke published the first of these sentences, and the advance which has made it possible to write the second has been due in very large part to the work of Macewen himself. It is long since any work of greater value and of greater practical importance has come to us from England. It is not a compilation of other men's opinions; it contains no abstract theorizing, no details of elaborate but as yet fruitless experimentation, but it is a plain, straightforward account of the various pyogenic infective diseases, and the results of his own work. These results are sufficient: thirty-five cases of meningitis, with twenty-eight operations and twenty-four recoveries; twenty-seven cases of sinus thrombosis, with twenty operations and sixteen recoveries; thirty cases of abscess, with twenty-four operations and twenty-three recoveries; fifty-four mastoid operations, with forty-three cured and eleven relieved, make a record which may well justify publication.

The first chapter is devoted to the surgical anatomy of the brain as far as it is important in regard to the pyogenic infective diseases. The majority of the pyogenic affections arise from neglected otitis media. Hence a knowledge of the relations of the temporal bone and the venous supply of the head becomes essential, and the anatomy of these parts is described in the fullest detail, with the utmost clearness, and with constant reference to the practical application. ond chapter is devoted to the pathology. Microorganisms are the chief if not the only cause of the pathogenic processes, those most constantly found being the streptococcus pyogenes and the staphylococcus pyogenes aureus. These enter either through wounds of the scalp or from purulent disease of the ear or nose, and infect the membranes, the sinuses and the The next two chapters are devoted to a brain itself. consideration of abscess, meningitis, and sinus throm-In the limited space of a review we can note bosis. but a few points in regard to the symptomatology and diagnosis of these affections. The elicitation of a differential percussion note on percussing the skull is considered to be of distinct diagnostic value, especially in children. When the fluid contents of the skull are increased, a clearer note may be elicited. In abscess the temperature is not elevated, the pulse and respiration are slow; in meningitis the temperature is persistently high, the pulse rapid, and there is general irritability and over-acuteness of all the senses; in thrombosis the temperature shows marked remissions, the pulse is weak and rapid, there are recurrent rigors, sweats, infarctions, diarrhea, and pain in the posterior triangle, sub-mastoid region and along the jugular vein. In regard to treatment the advice is radical. "A person might as well have a charge of dynamite in the mastoid antrum and cells" as chronic suppuration. this cannot be cured by the ordinary means at the disposal of the aurist there must be thorough operative interference, arresting the encroachments of the disease toward the brain cavity, clearing out the mastoid cells, affording a free outlet to discharges, and filling the parts with fresh fibrous tissue as a barrier to pyogenic invasion. If the disease be more deeply seated, further interference becomes necessary. After the tympanic cavity and the mastoid cells have been cleared out the sigmoid sinus may be entered through the cavity and fistulous openings should be explored. If there be an abscess more extensive openings become necessary, through a trephine hole in the skull. In infective meningitis it is sometimes difficult to remove the pus by irrigation, but an attempt at washing out the purulent secretion should be made. Macewen suggests, although he has not tried it, that in pyogenic cerebrospinal meningitis an attempt at irrigation should be made after one or more lamnectomies, injecting the fluid from the intradural cerebellar space down the spinal canal.

For the details as to the symptoms, diagnosis, and methods of operation we must refer the reader to the original. Full reports of sixty-five cases are given, and the work is profusely illustrated. All but three of the illustrations are original, and the mechanical execution of them is extremely fine. We can say no more in praise of this great book except that it is indispensable to the surgeon, aural surgeon and neu-

rologist.

Elaborate and magnificent as the illustrations of the work are, they are supplemented by the plates of the atlas, and as these plates are constantly referred to in the text, the atlas becomes a necessary companion to the book. It is, however, something more. There is but one English work with which it can be compared — the magnificent "Brain Sections," of Dalton, which is now practically unattainable. Macewen's plates is now practically unattainable. are unfortunately reduced to about two-thirds of lifesize, and in the perfection of execution and in clearness they are a little — but only a little — inferior to Dalton's. The various sections are not all made at such regular intervals, and the series are not always quite so complete. There are three series of coronal sections in males of sixty, forty, and two and a half years; one series of sagittal sections in a male of thirty; and three series of horizontal sections in males of thirtyfive, fifty and five. They give us, however, information which cannot be obtained from Dalton. Dalton's sections were simply of the brain; Macewen's are sections of the whole head. Hence, in comparing the two, one very striking difference is the way in which the brain, in Dalton's sections, seems spread out and flattened. In Macewen's sections it is held firm and upright in its bony case. In this atlas we can study, as we can nowhere else, the relations of the tympanic cavity and mastoid cells to the brain and the sinuses; the extremely thin walls that separate them; the numerous vascular connections by which infective processes can travel from the ear to the brain. Certain other facts, hitherto practically unrecognized, are made plain: the way the temporo-sphenoidal lobe is enclosed in a bony and membranous case, so that the only possible way of expansion is upwards, towards the lower frontal convolution; the way the frontal lobes dip down in the median line, and their very intimate relation to the | tomed to turn for help in their medico-legal emergencies.

ethmoid cells; and the fact that the cerebellum ascends between the cerebral lobes in the median line to a level with the orbital roof, and is wrapped around the medulla and part of the cord, descending down through the foramen magnum. These plates, therefore, showing us the brain as it is in situ, with all the surrounding parts, become of greater value, for practical purposes, than the plates of Dalton, and, showing the deeper parts on section, they give far more valuable detail than the work of Fraser. As regards the anatomy of the brain itself they may not add greatly to our knowledge, but as showing the practical relations between the brain and the surrounding parts, they form an important addition to our knowledge, and they must serve as an indispensable guide to the surgeon in undertaking any operation on the brain.

A System of Legal Medicine. By Allan McLank HAMILTON, M.D., Consulting Physician of the Insane Asylums of New York City, etc., and Law-RENCE GODKIN, Esq., of the New York Bar, with a corps of Collaborators. Illustrated. Vol. I. New York: E. B. Treat. 1894.

This treatise, of which the first volume only is under present notice, represents fully the composite method of literary construction. The editor has enlisted the co-operation of a corps of twenty-eight writers, more or less identified with the science and practice of legal medicine, more or less able to speak with authority upon medico-legal themes. The claim is set forth in the publisher's prospectus that "the list of contributors to this great work includes the names of some of the most distinguished writers and authorities upon Medical Jurisprudence in America"; how far this claim has been justified, the discriminating reader will be able to judge for himself.

This volume contains chapters on the technique of autopsies, the medico-legal aspects of death, the identification of blood, personal identity, homicidal wounds, poisoning, life and accident insurance, the legal relations of physicians and surgeons, and indecent assaults upon children. It does not appear that any well-considered method has been followed in the arrangement of the several topics, nor does the editorial supervision seem to have been either exacting or critical in preparing the various manuscripts for the printer.

A conscientious endeavor is apparent in most of the contributions to give a tone and flavor of freshness to the work, to avoid the use of the familiar citations found in other treatises, and to present the most recent advances in forensic medicine; the cases which have attracted public attention in the past two years, the Borden, Halliday and Trefethen affairs for example, are described in their appropriate relations and are a proof of the progressive character of the work. There is also a manifest American spirit throughout the book; the allusions to the law and the references to illustrative cases are generally national rather than international and the book is evidently designed and adapted for American readers.

While there are many excellent features in this new candidate for approval, many qualities that deserve recognition and commendation, it is fair to state that the newest in medico legal literature, as in other literature, is not necessarily the best; and it is hardly probable that this latest venture will render obsolete and useless the works to which physicians have been accus-

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A NEW DEPARTURE IN CONNECTION WITH DIABETES: DR. PAVY'S CROONIAN LECT-URES.

Dr. F. W. PAVY has been for forty years pursuing his investigations to ascertain the rôle of sugar in the animal economy. The Croonian lectures of this summer delivered by him, have for their subject, "A New Departure in Connection with Diabetes.

It is now sixteen years since his first Croonian lectures on diabetes were delivered, and the present course marks many advances since then, the result of painstaking experiments.

Dr. Pavy points to the wide distribution of carbohydrates in nature, and affirms that "carbohydrates are the source of organic matter." Starch is the primordial organic product: fat, proteids, cellulose, lignose, etc., originating from it by ferment or protoplasmic action. Living protoplasm in the plant has a constructive influence on carbohydrates formed in the leaves (in chlorophyll cells) and mineral matter and nitrogeneous compounds absorbed by the roots; the product is cellulose (plant-fabric) and protein. The demonstration of the ability of living protoplasm to utilize carbohydrate in the formation of proteid matter constitutes the most striking feature of these lectures.

Yeast cells are placed in Pasteur's saccharine and ammonium-tartrate solution; they grow and produce fresh yeast cells, hence proteid matter. This is cited as an example of what takes place throughout the whole animal and vegetable kingdom. There is a finely-balanced play of ferment action and protoplasmic action. The former hydrates and splits up, the latter dehydrates and synthetizes. Dr. Pavy, by an interesting experiment, demonstrated the extraction of carbohydrate from albumin. His theory now is that protein is, in its fundamental constitution, a glucoside. Pavy made his discovery in the course of an investigation with regard to glycogen. He isolated glycogen

carbohydrate was converted into sugar by sulphuric acid; the proteid molecule, in fact, in presence of sulphuric acid undergoes cleavage, and the carbohydrate is liberated in the form of sugar. Moreover, by ferment action, carbohydrate may be liberated from the proteid molecule, and this occurs during the process of digestion. Pavy took some pure albumin from white of egg, and submitted it to artificial digestion, and as a result carbohydrate was obtained, which gave osazone crystals with phenylhydrazine. Again, and conversely, the simple principles obtained from protein - peptone and carbohydrate — when subjected to the influence of the protoplasm of the cells lining the villi become synthetized by the protoplasmic action into proteid.

It may here be remarked that if this doctrine should be accepted that proteid matter has a glucoside constitution, it will prove to be of great physiological importance besides presenting certain obscure pathological problems in a new and clearer light. Carbohydrate matter is seen to stand in a quite different position from that which it has been looked on hitherto as holding. Nitrogenous matter was considered to be the flesh forming portion of our food; the new doctrine affirms that carbohydrates, also, contribute to flesh formation. Moreover, carbohydrate is susceptible of conversion into fat, as is shown by a simple experiment with the yeast plant fed with Pasteur's solution; yeast cells growing in this solution are found to contain fat. Again, in the higher vegetable organisms - in the fatty seeds - the fat formation is preceded by starch formation.

Pavy contends that his experimental studies have completely discredited the glycogenic doctrine of Claude Bernard. This doctrine represents that carbohydrate matter taken into the alimentary caual becomes absorbed and passes through the portal vein to the liver to be stored away as glycogen, ultimately to escape as sugar into the systemic capillaries. This theory does not explain how carbohydrate matter is disposed of in the capillaries, and if sugar as such were conveyed into the general circulation there would be constant glycosuria, for the sugar cannot reach the systemic capillaries without being made manifest through the urine. This he had proved by test experimentation. We have not space to follow him here, nor in his general refutation of the glycogenic doctrine. He denies that the liver is saccharine to an extent that other parts of the body are not; that the blood escaping from the liver contains more sugar than the blood going to it; likewise, that the blood on the venous side of the systemic capillaries contains less sugar than that on the arterial side. The liver, in fact, is required to perform the reverse office, and to prevent the passage of sugar into the general circulation. In proportion as sugar does pass in a free state, so will it appear in the urine. Carbohydrate does certainly exist in all parts of the body, and there must be some means of transport from the seat of ingestion to the distant parts; it does not pass in a free state else it would appear in the urine, but as a proteid. A person partakes of food from liver, muscle, etc., by boiling with potash; the containing carbohydrate matter. If ingested as starch, the carbohydrate matter is subjected first to ferment action, whereby it is hydrated to the simpler state of saccharose. So, by ferment action, the proteid elements of food are converted into albumose and peptone, also into sugar. This latter process constantly takes place during digestion, and is not dependent on the liver as Bernard taught. In the liver, on the contrary, amyloid matter escaping conversion in the intestine into proteid, is stored up as glycogen, to be subsequently converted into fat by the synthetizing action of the protoplasm of the liver cells. Pavy thinks that there is first a construction of proteid, and subsequently, by ferment action, a conversion into fat.

After the breaking-up and hydrating influence of ferment action has been exerted on the complex carbohydrate and proteid molecules of our food, the opportunity is provided for protoplasmic action to come into play. The products of digestion as they lie in the intestinal canal become brought within the sphere of influence of living protoplasm belonging to the villi. Carbohydrate matter in the form of sugar lies with peptone within the sphere of influence of the protoplasm belonging to the cells of the villi; here, proteid in the shape of albuminoid matter is formed and the peptone and glucose, as such, disappear. In other words, there is a synthesis of glucose and peptone to form proteid matter. The proteid formed is a glucoside: has carbohydrate locked up in it, and as such is fit for utilization by the economy. The lacteal system probably constitutes the chief channel for the passage of the formed albumin from the products of digestion into the system; some of the newly-formed proteid also passes through the portal vein. In combination under the form of proteid, carbohydrate can be conveyed through the general circulation to the tissues without elimination by the urine, while if permitted to circulate in a free state it could not fail to be drawn upon by the kidney and thereby render the urine saccharine. After appropriation to the nutrition and growth of the tissues, it may be subsequently broken down, for everywhere building-up and breaking-down processes are simultaneously going on, and give rise to the liberation of either glycogen or sugar.

It will be seen from the above statement that Pavy believes that the liver supplies a sort of supplementary agency for checking the passage of free carbohydrate matter into the general circulation. By protoplasmic action here exerted, reduction in hydration with transformation into glycogen occurs. In the form of glycogen it is non-diffusible and can be retained. As before said, he thinks that its ultimate destination is to be converted into fat, but the liver cells may also transform their glycogen into proteid.

Under the view here stated, there is, l'avy affirms, nothing inscrutable or mysterious about the nature of diabetes. Carbohydrate matter ought to be disposed of in such a manner as to be prevented from reaching the general circulation as sugar. If not so disposed of, it simply passes through the system in an unutilized state, and is eliminated as waste material with the urine.

The natural disposal of carbohydrate is effected by protoplasmic assimilative action. In diabetes, then, protoplasm from some cause (want of nutrition, capillary stasis, decline of vigor through age, etc.) fails to exercise the power belonging to it of synthetizing the carbohydrate into proteid, and hence it appears as sugar in the urine.

It cannot be said that the problem is yet entirely worked out, or that Pavy's theory of a super-oxygenated condition of the blood as a proximate cause of the failure of living protoplasm to assimilate and synthetize carbohydrate matter is very clear. It is certain, however, that a better understanding of the vexed questions of sugar assimilation and sugar disposal will be facilitated by these studies.

THE BLOOMINGDALE ASYLUM.

On August 7th the first detachment of patients was removed from the old Bloomingdale Asylum in New York to the new institution at White Plains. In view of the approaching abaudonment of the old Bloomingdale site by the New York Hospital authorities, a short sketch of this venerable asylum may be of interest. For a number of years after its foundation there was no provision made for the treatment of the insane by the governors of the New York Hospital, which was organized in the year 1770, and incorporated by King George III in 1771, under the designation of "the Society of the Hospital in the city of New York in America." In the new hospital building at Broadway and Pearl Street, which was erected after the Revolutionary War, and formally opened January 1, 1791, a ward in the basement was set apart for those suffering from mental disease, and this was the starting-point of the department for the insane. As the years went on, this basement ward proved entirely inadequate for the accommodation of the patients of this class, and consequently a special pavilion for the insane was put up on the hospital grounds.

Finally, the governors became convinced of the desirability of acquiring a suitable suburban site for the erection of a separate asylum; and in 1818 they selected a beautiful and historic spot, Bloomingdale Heights, which at that period was described as "the hill and battle-ground of Bloomingdale, about six miles north of the city." This is the property - extending from 115th Street to 120th Street, and from the Boulevard to Amsterdam Avenue, and famous for its picturesque situation and the exquisite beauty of the grounds - which the institution has occupied up to the present time, and which was recently sold to Columbia College for its new university buildings. Around the site were scattered a score of old colonial residences, many of which belonged to the governors of the hospital; and prominent among these was the De Peyster mansion, which did service as General Washington's headquarters in the battle which is known as that of Harlem Plains. At its centennial anniversary in September, 1776, the New York Historical Society held the exercises in commemoration of that event in this De Peyster house, which was to be seen on the bluff above Morningside Park until about a year ago, when it had to be taken down to make room for the new St. Luke's Hospital.

Up to the day of the purchase of Bloomingdale Heights by the Society of the New York Hospital, the sides of the hill carried redoubts and breastworks, sentry-lookouts, and even cannon, for the position had been utilized as a sort of fort and encampment all through the war of 1812. Within the grounds of the institution many of these marks of war were allowed to remain, and they will probably be preserved also by Columbia College.

On May 7, 1818, the corner-stone of the first building of the Bloomingdale Asylum was laid; and in June, 1821, the first patients were admitted to the new institution. In 1829 the large male extension was added, and at various times since then a number of other buildings have been erected. It is worthy of note that the new home of the asylum, like the old, is situated at a point of Revolutionary interest, the site selected being under the shadow of Chatterton Hill, on which the battle of White Plains was fought.

The records of such an institution are full of interest. Among them may be found the history of the first case, it is said, in which acute mania was produced by mesmerism. The patient was a young man of twenty, suffering from a mild form of epilepsy, whose father, having consulted a number of reputable physicians with unsatisfactory results, finally took him to a mesmerist quack. The treatment of the latter produced a very unexpected effect, and his condition soon became serious. For days together he would lie in a cataleptic state, and then all at once break out into a fit of uncontrollable mania. It is stated that when he was brought to the asylum he was tightly bound to a wide board; but in a short time the quiet of the place and the careful nursing he received restored him to his natural condition. For a number of years after the asylum was opened cases of delirium tremens constituted a large proportion of all the patients treated as there was at that time no other institution in the city where alcoholics were admitted.

MEDICAL NOTES.

CHOLERA. — The cholera in St. Petersburg is less severe, but in the provinces has shown no signs of abating. In three days of the past week it is reported that there were 237 new cases of cholera, and 129 deaths from the disease in Galicia. In Bukowina, 38 new cases and 21 deaths were reported in the same time. The disease has appeared in Prussia, and already about 60 cases with 20 deaths have occurred in the Dantzig and Johannisburg districts. The troops of the Cracow garrison of the Austrian army were affected while marching through Silesia, and several men were taken ill at Bielitz and at Oswiecin. In Holland, scattered cases still occur.

An Honor for Dr. Wolcott Gibbs.—The American Chemists' Association has made Dr. Wolcott Gibbs, emeritus professor of chemistry at Harvard, an honorary member of the society. Dr. Gibbs is the first American to receive this honor.

THREE AGED SISTERS. — Three sisters in Lancaster, Pa., claim to have the highest aggregate age of any family trio in the State. They are Mrs. Margaret Ewing, aged 92 years; Mrs. Elizabeth Zell, 94 years; and Mrs. Martha Morrison, 97 years; a total of 283 years.

LAKE WINDEMERE, POETS AND POLLUTION.—
The charm of Lake Windemere and its influence upon English literature are soon to give way to a more potent and less poetic action upon mankind. It is reported that some of the local boards have taken to emptying without purification large volumes of sewage into its hitherto limpid waters, so that it may soon become a dangerous pollution for the vicinity.

Female Medical Students in Scotland.—
The London Hospital says: "Each Scotch medical school in its turn seems destined to become the battle-field upon which female medical students have at the outset to meet repulse. The Dundee Royal Infirmary is the last centre of medical education asked to open its doors to lady students. The application has met with definite refusal. The two strongest reasons urged against it were, first, that there was no precedent, and, secondly, that such an innovation would tend to make the infirmary less capable of curing diseases. Of all reasons to bring forward these were of the poorest, and Edinburgh could indignantly repudiate the last were not the fame and popularity of its royal infirmary too widespread to need any vindication."

THE ANNUAL EPIDEMIC OF SUICIDES IN PARIS. - The number of suicides in Paris, which reaches a maximum each summer, is this year greater than ever, and might almost be called an epidemic. During the week ending July 8th there were seventeen self-inflicted deaths, and the week before thirty-one. The mean maximum of temperature during the two weeks, according to La Semaine Médicale, was 25.4 and 27.4; so that the statistical opinion of a direct relation between high temperatures and suicides is upheld. It also calls attention to the fact previously established by statistics that the largest number of suicides occurs during the last quarter of the moon. The week credited with thirty-one suicides was the last in June, from the 24th to the 30th; and the last quarter of the moon fell on the 26th. In every way this epidemic was typical, as the maximum of the suicides occurred between six A. M. and noon, quite according to rule.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the week ending at noon, August 22, 1894, there were reported to the Board of Health of Boston, the following numbers of cases of acute infectious disease: diphtheria 32, scarlet fever 34, measles 3, typhoid fever 22.

AN EPIDEMIC OF MALARIA AT NEWTON, MASS.—During the last few weeks there has been an unusually large number of cases of malaria in Newton due to the exposure of the mud banks along the Charles, owing to the low condition of the river. During some parts of the day the stench from the flats has been blown a long way back into the city, while near the river it has been most offensive. Most of the cases of malaria so far have been in the river wards and along Newtonville and West Newton, though cases have occurred in Nonantum.

New England Convention of Deaf Mutes. — The New England Convention of Deaf Mutes held its annual session in Worcester on August 14th.

BEQUESTS OF JOHN G. WHITTIER. — The will of the late John G. Whittier contains, among others, the following bequests for hospital purposes: Amesbury and Salisbury Home for Aged Women, \$9,914.42; Anna Jaques Hospital, Newburyport, \$9,914.42; Haverhill City Hospital, \$1,000.

A NEW SEWERAGE SYSTEM FOR ATTLEBORO, Mass. — The town officers and a committee of citizens of Attleboro appointed to investigate the methods of sewerage disposal best suited to the town needs have decided upon the filtration system which will be adopted in place of the present discharge of sewerage into Ten Mile River.

NEW YORK.

THE SUSPECTED CHEESE INVESTIGATION. — On August 16th, Dr. A. L. Beebe made his report to the Board of Health upon the result of his bacteriological investigation of samples of the cheese recently shipped from the dairy at Afton, Chenango County. With the diphtheria bacilli cultures obtained from the cheese he inoculated a number of guinea-pigs, but none of them developed any sign of ill-health. The animals were then killed, and a careful search made for diphtheria bacilli, but none were detected.

MORTALITY. - There has been a very gratifying reduction in the city's mortality, owing, no doubt, in great part to the cooler weather that has prevailed of late. During the week ending August 11th there were reported 769 deaths, which is a decrease of 219 from the week previous, and represents an annual deathrate of only 20.42 per thousand of the estimated population. The births reported during the week amounted to 1,164, an excess of 395 over the deaths. The deaths from diarrheal disease among young children diminished from 244 the preceding week, to 140. Most of the contagious diseases also showed a considerable reduction. Thus, of diphtheria, there were reported 111 cases, with 34 deaths, against 146 cases, with 37 deaths; of scarlet fever, 23 cases, with 6 deaths, against 40 cases, with 5 deaths; measles, 16 cases, with no deaths, against 26 cases, with 5 deaths. Typhoid fever, however, as usual at this season of the year, shows a slight increase, the number of cases reported being 37, against 21 in the previous week.

Miscellanp.

THE AMERICAN PHYSICIAN AS SEEN BY A FRENCHMAN.

A FRENCHMAN, who has travelled in this country and read the writings of other returned voyagers, describes, in a recent article, the customs of the American physician, which, he says, are so different from those of the French doctor as to merit a moment's attention. It is interesting to note some of the particular characteristics remarked by M. Baudouin.

First of all is the widespread security in which specialties flourish, so that even in cities of a second rank "ophthalmologists, who usually are also otologists, just as the rhinologist is a laryngologist, neuropathologists, pediatricians and electro-therapeuticians are as abundant as gynecologists and proctologists. . . . In every large city there are always one or more dispensaries for diseases of the eye and ear as well as women's hospitals; so that many physicians devote themselves wholly to one or the other class of cases."

Another interesting custom is "the office." "In practising medicine in cities," he says, "specialists often make use of a single consultation room, away from their dwelling, in the business part of the town, so that it serves each one of them at a different hour. The patient afflicted with several diseases, resorting to several physicians, sees them one after the other without trouble or loss of time. In other cases, always with the same purpose of facilitating multiplied and successive visits of their clients, the same specialists hire several different apartments in the same building with other persons - as architects, lawyers and bankers. . . In New York, a city relatively like the old continent, and where there are still some of the old prejudices, physicians almost all receive at their homes in a quiet part of the city. . . . In Washington it is still different; here the physicians are grouped together in the aristocratic part of the city. Many physicians are not contented with the simple sign which is everywhere in use. Doctors who are très sérieux write their names at the bottom of each window facing the street; others still less opposed to publicity do not hesitate to hang from the front of their houses signs which swing in the wind, like those of the White Horse Inns of our provinces. It is sufficient to go to Chicago to enjoy this spectacle unknown in Europe" (!)

The light two wheeled "buggie" was also an object of keen interest; but after giving some interesting statistics of the ratio of physicians to population (the largest city having a population of 375), our author gives the most delicious example of the social life of the American physician, which he quotes "from a writer who appears to me to have judged these physicians with sufficient good sense, although only a layman." Voici l'histoire!

"The physicians of the West have often only this in common with their confrères of Europe, that they charge for their visits. They do not suffer from intellectual engorgement during their studies, and obtain their degrees very easily. An American disciple of Esculapius living in the small chief town of a county in lowa had the misfortune to lose his wife. After several months of regrets and tears our man cast his eyes upon a blonde Swedish woman who cooked his "beefsteacks." However, even in America it is not

¹ Progrès Médicale, July 21, 1894.

good form to marry one's cook; and the old lover was burning up with slow heat, when it occurred to him to try strategem. He remembered that Chicago possessed, among others, one Faculty which could in six months make a doctor of medicine of any man or woman who came along. It was just the thing. The next day the young Scandinavian took the train for Chicago, and six months later the marriage of Doctor J. to Doctoress A. was announced."

HAFFKINE'S ANTI-CHOLERA INOCULATIONS.

WE have already given an account of the methods employed by Dr. Haffkine in the inoculation against cholera, and of his first inoculation of over 900 persons in Agra in the spring of last year. The last twelve months have offered an opportunity to test the effectiveness of the protection, as a sufficient number of persons have received the injection to give a good exposure to true cholera in many parts of India.

After leaving Agra, Dr. Haffkine went to Aligarh and Jhansi, and thence to Lucknow, where he inoculated 1,200 persons, including nearly 500 British soldiers. At Patalia 3,400 persons were inoculated, including the family of the Maharajah. In all, there have been about 25,000 persons inoculated since March 1893. The first real test of the efficacy of the treatment occurred last March near Calcutta and an interesting account of the conditions is given by Dr. W. J. Simpson, in a report to the commissioners of the Municipality of Calcutta in May of this year.

"This year, as soon as the cholera season began, Dr. Haffkine came down to Calcutta, and in the course of six weeks inoculated over 1,200 persons in different parts of the town where cholera was prevalent. The numbers and the short time since the inoculations are obviously insufficient to allow of definite comparisons being drawn, but one or two remarkable facts which have been observed where the proportion of inoculations in the locality has been larger than in others, and where a small local epidemic of cholera prevailed, arrest the attention. About the end of March two fatal cases of cholera and two cases of choleraic diarrhea occurred in Kattal Bagan Bustee, in a population grouped around two tanks. This outbreak led to the inoculation of 116 persons in the bustee out of about 200. Since the 116 cases were inoculated, nine more cases of cholera, of which seven were fatal, and one case of choleraic diarrhea, have appeared in the bustee. All these ten cases of cholera have occurred exclusively among the not-inoculated portion of the inhabitants, which, as stated, forms the minority in the bustee, and none of the inoculated have been affected.

"The following facts were observed: In Ramdhun Dutt's house six members out of eight in the family were inoculated between March 31st and April 7th. On April 9th cholera affected one of the members of the family, who subsequently died. This death occurred in one of the two not inoculated, the six inoculated remaining unaffected.

"In Shaik Subratee's house there resided fourteen persons. Two cases of choleraic diarrhea occurred among them. After this, seven out of the fourteen were inoculated. Since then one case of choleraic diarrhea has occurred in an adult not inoculated.

¹ Practitioner, July, 1894.

"In Karam Ali's house, the family consisting of eight members, three were inoculated on March 31st, and on May 7th one of the five who were not inoculated was affected with cholera and died.

"In Mungloo Jemadar's house a fatal case of cholera occurred on March 29th. On the 31st eleven members of the family, out of a total of eighteen, were inoculated. It so happened that cholera, again breaking out in the house, attacking four persons, three of whom died, selected four of the seven not inoculated, while the eleven inoculated remained perfectly free.

"The numbers are still too small for any definite conclusions, but they are sufficient to indicate the manner in which this all-important question will be solved. To carry on these observations in Calcutta on a large scale in its most affected parts during the next one or two years would, in my opinion, solve the question, for it is obvious that under these conditions a sufficient number of facts would be collected in Calcutta to determine the amount of protection that can be given by Dr. Haffkine's anti-choleraic vaccine to individuals or communities in an affected locality; and accordingly I recommend the Commissioners to give the system an extended trial."

THE SPECIALIST AND THE GENERAL PRAC-TITIONER.

In his valedictory address to the graduating class in medicine of the University of Pennsylvania, Dr. Louis A. Duhring gave the following excellent advice regarding the choice of a "specialty," and the relations it should have to general medicine:

"The field of medicine," he said, "has expanded so vastly that the minds of even the strongest men are unable to assimilate all that is being evolved from the abundant mass of accumulated material. Division of labor in the world of disease, as in the other spheres of life, has become a necessity. Broadly and correctly interpreted, a specialty is a branch of general medicine; without general medicine there can be no legitimate specialties. To be genuine a specialty must be supported by a full understanding of the principles and practice of medicine and general pathology, without which no medical man is fitted to be a special observer.

"The pursuit of a specialty incites to study and research; it opens new paths and fields of knowledge, and advances the science of medicine to the benefit of the profession at large. The specialist who is well equipped for his position, and who pursues his investigations from an elevated and scientific plane, should be encouraged. He is a distinctly valuable member of the community."

As to the choice of work in medicine he said: "Pursue the kind of work you are best fitted for, whether in some particular line or as general practitioner. Permit me here to remark that there is no field more estimable, honorable, and advantageous than that which the all-round medical man occupies. The world needs him to-day as much as it needed him five hundred years ago, and it will always require him. The sphere will ever remain open to all worthy men. The field of the specialist is found only in populous centres of highly civilized life, where large hospitals exist, and where diseases of the same kind are con-

¹ University Medical Magazine, August, 1894.

gregated; the field of the general physician and surgeon is everywhere on the face of the globe. His services are always in demand, in the upper walks of life as well as among the poor. In rank he is the peer, nay, the superior, of the specialist. He literally controls the situation, for without him the latter cannot exist.

"The tendency of the day is towards specialism, but take care, my friends, that you follow not heedlessly with the throng. Believe me when I say that in so doing you are in danger. The mediocre or unsuccessful specialist occupies an unenviable position. Between his lot and that of the struggling general practitioner we should decide in favor of the latter. You are not all fitted by nature to be specialists. Probably most of you would meet with more prosperity and fill out more rounded and satisfactory lives as general practitioners. From a wordly stand-point, the average of your combined professional incomes would probably be larger in the latter than in the former sphere. It is a deplorable error to think that specialism is the only avenue leading to position and profit. The man with ability and tact succeeds whether his line of work be general or particular. The specialist, unless supported by character, preëminent attainments and skill, will probably fall short of distinction.

"To enter upon the study and practice of any particular department of medicine without natural endowment for the work entailed is a mistake. The practitioner, for example, who pursues the study of children without possessing by nature a kindly feeling for the little ones, can never gain their confidence, without which a successful career in the treatment of children's diseases is impossible. The eye, the throat, the ear, and the teeth, all require distinctive surgical aptitude and skill; the skin calls for faculty of close observation and attention to detail; the nervous system demands influence, control, and power. The surgeon should have a sound physical condition, with strong nerves and a steady head. He should possess decision, with good reasoning powers, knowing when to with-hold the knife as well as when to apply it. He should be a masterly anatomist, a dexterous operator, and a broad-minded pathologist. The practice of internal medicine calls for a patient, accurate observer, one who is able to interpret correctly the slight as well as the grave symptoms, and who realizes the importance of aiding rather than of coercing nature. She may sometimes be forced, but oftener she must be wooed. Without these requisites nothing beyond mediocrity can be hoped for.

MASSAGE IN THE SOCIETY ISLANDS.

In a recent discussion on massage at the Medico-Chirurgical Society of Edinburgh 1 Dr. A. J. Keiler quoted the following interesting extract from Capt. Cook's diary, dated from Society Islands, September 22, 1777:

"I now returned on board my ship, attended by Otoo's mother, his three sisters, and eight more women. At first I thought this numerous train of females came into my boat with no other intention than to get a passage to Mataria; but when we arrived at the ship, they told me that they intended to pass the night on board for the express purpose of undertaking the cure of a disorder I had been complaining of, which was a

¹ Edinburgh Medical Journal, August, 1894.

pain of a rheumatic kind. I accepted the friendly offer, had a bed spread for them on the cabin floor, and submitted myself to their treatment. They began to squeeze me with both hands from head to foot, but particularly in the parts where the pain was lodged, till they made my bones crack and my flesh become a perfect mummy. In short, after undergoing this discipline for about a quarter of an hour, I was glad to get away from them. However, the operation gave me immediate relief, which encouraged me to try another rubbing down before I went to bed, and it was so effectual that I found myself pretty easy all the night after. My female physicians repeated their prescription next morning before they went on shore, and again in the evening when they returned on board, after which I found the pains entirely removed; and the cure being perfect, they took their leave of me the following morning.

"This operation is universally practised amongst these islanders, sometimes performed by the men, but

more generally by the women."

THE MEDICAL PROFESSION AND SOCIALISM.

In an address upon "Medicine; Its Relation to the Spirit and Tendencies of the Age," delivered before the annual meeting of the North of England Branch of the British Medical Association, Dr. Thomas Oliver spoke of the indirect influence which the medical profession had had upon the present social conditions, and the more direct interest of physicians in the question of the wages and poverty of the working classes. He said:

"The amount of surplus production to be given to capital and the amount to be handed over to labor are questions in the settlement of which we, as a profession, can take no part. The wages of any class are regulated by the law of supply and demand. Although not directly concerned, this settlement of the wages question is a very important matter to a very large number of members of the medical profession, for as it is from the working classes that the major part of their income is drawn, they are necessarily influenced by the monetary recognition of labor, particularly if it only just reaches the limit of a 'living wage.' ease has to be paid for as if it were a luxury. It is, therefore, quite impossible for unskilled laborers who are living in a town, and whose wages are small, to pay their medical attendant handsomely. To all of us, therefore, this wages question is a matter of considerable importance. Trades unionism has raised the position of the working classes and enriched their pockets. By combination they have secured a higher price for their toil than singly they could have succeeded in obtaining. Whilst the aim of trades unionism at the first was to make provision for their families in sickness and death, the objects at present are improvement in the conditions of labor, as seen in the demand for increased wages, reduction in the hours of labor, limitation of production, and improved sanitation of the industries. The medical profession has advocated the improving of the sanitary conditions under which our industries should be conducted.

"Our ideas of public health have permeated society, and are thus indirectly acting in behalf of the working classes, to shorten the hours of labor, to prevent child-

¹ Lancet, July 21, 1894.

labor and the employment of women who are mothers, and girls in occupations that are unhealthy."

Though so situated as to see the vast contrasts in social opportunities, the physician is rarely a supporter of radical, so-called, socialism; and Dr. Oliver explains this by referring to the character of the work in which

the physician is engaged.

"There is no class of men by whom the sad effects of the differences in social life are more frequently observed, or to whom the serious consequences of illrequited labor more pathetically appeal than to us. It is ours to move with noiseless tread in the subdued glare of luxury, where wealth obtains all, to rob illness of much of its sting; and it is ours to stand where poverty throws its shadow and human life, as it slowly ebbs away, pays the penalty of existence in suffering unrelieved by even ordinary necessaries. It is scenes such as these, it is the pangs of hunger experienced and with no capability of relieving, that create the cry, 'Give us the wherewithal to live; give us labor or its opportunities; give us a sufficient return for our toil, so that we may meet eventualities.' This cry, be it remembered, comes from the working classes who, numerically, form the bulk of our population. Fully cognizant of the numerous imperfections of our social life, and while recognizing the necessity for change, I do not see how socialism, as at present advocated, will give earth the heaven its supporters dream of. It may be that is because we are members of a profession, success in which is so largely personal, that we cannot allow the claims of individualism to be so rudely set aside by collectivism. Our professional existence depends upon life being imperfect and upon inequalities of the human constitution. Social progress is the sum of the efforts of individuals whose mental and physical inequalities had so far placed them beyond mediocrity that they transformed whatever they touched."

A MODEL SURGICAL CLINIC.

SCENE, a spacious room. At a large table in the centre is seated the surgeon; his secretary is opposite, an enormous folio register open before him. A group of students is clustered about the table. Benches filled with waiting patients occupy the sides of the room. The secretary calls No. 120,736. A man aided by crutch and cane limps forward. The surgeon's examination into the biography and genealogy of the patient (four folio pages carefully written out by the secretary) being ended, the attendant removes the multiple wrappings of the right foot, exposing an inflamed great toe with ulceration upon one side of the nail. The surgeon gives it a hasty glance, and, turning, addresses the students as follows:

"Gentlemen, a few years ago a case of this kind, — evidently an ingrowing nail, — would have been at once submitted to local treatment, and, I admit, with fair prospects of obtaining a good result. But now that we have learned the general interdependence of the different organs of the body, we feel that a thoroughly scientific treatment demands the examination by specialists of these different organs, in order to detect any conditions likely to be etiological factors in the case. The attendant will therefore take him and a copy of his history to the different rooms in succession, and return here with their respective official reports."

[Some Hours Later.]

Surgeon (loquitur). — "Gentlemen, the patient, has now returned to us, and I ask your attention while I read the reports of the various specialists."

Ophthalmological Department. — Case No. 120,786. This patient is myopic. As I recall a case where a similar visual defect was the cause of injury to the great toe in a person who "stubbed" it against the curbstone, I have ordered appropriate lenses to correct the difficulty, as a prophylactic against the recurrence of the disease. It is essential, however, that this treatment should be supplemented by wearing a loosely fitting shoe.

Otological Department. — Case No. 120,736. I find no defect of audition. As the patient's trouble may have arisen from want of suitable support to the foot, I have thought it best to shorten the stapes leather two holes.

Rhinological Department. — Case No. 120,736. A case of nasal tone ail. Wishing to bring about a radical change in the parts, I have removed with the curette all adenoid growths, together with the adherent mucous membrane, from the cavities and packed them all with aseptic gauze — which should be removed if the patient wishes to sneeze. Department Abdominal Surgery. — Case No. 120,736. Drs. A B and C, in consultation. The history showing that the patient's mother during life lost a set of false teeth, Dr. A, reasoning that "tooth and nail" are generally associated in action, is inclined to think the set may have been swallowed unconsciously and remained in the patient's stomach. Of course, he advises an operation.

Dr. B, in view of the accepted belief that "Gallia est omnis divisa in partes tres," thinks it possible that one of them may have wandered down to the great toe, and advises an exploratory incision of the gall-bladder to ascertain if either part be missing. The "Gallic boot of love," cited by Dr. O. W. Holmes, seems to indicate a tendency of the

gall to the foot.

Dr. C concurs entirely with both of these opinions, but on general grounds advises the removal of the appendix. The patient, however, avers that this has been already done, and that he has it in a bottle at home, which he will fetch if required. It is therefore deemed advisable to await further development.

Gynecological Department. — Case No. 120,736. Palpation reveals no abnormal condition of uterus or appendages. A medical student calling our attention to the fact that the patient wears pants and has well-developed male generative organs, we doubt if this is a proper case for this depart-

ment

Department Genito-Urinary Diseases.—Case No. 120,786. Organs apparently healthy. It, however, is not impossible that the patient may have had a stone (vesical) which was passed naturally and impinged upon and injured the great toe.

Department of Neuroses, etc. — Case No. 120,736. The result of a careful examination of this case indicates a deficient innervation of his lower extremities. Two well-marked areas of impaired sensibility or partial ansesthesia are located in the gluteal regions beneath the tuberosities of the ischia. His history not mentioning this, we questioned him as to how long the condition had existed. His replies were unsatisfactory — merely to this effect, that he had "sat so long upon those d——d hard benches that his —— got numb." A rubber cushion with two holes is recommended, and the case should be kept under observation.

"There, gentlemen," continued the surgeon as he finished reading to them the reports, "you have the result of a careful scientific inquiry into this case.

"I shall now send the patient to the chiropodist around the corner, with instructions to have the toe cleansed and a piece of sheet lead inserted under the roughened edge of the nail. I counsel you all not to lose the opportunity of witnessing the operation. Good morning, gentlemen!"

METEOROLOGICAL RECORD.

For the week ending August 11th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:-

	Baro-Thermom- meter eter.			Re			Direction of wind.		Velocity of wind.				bebes.	
Date.	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Rainfall in in
S 5 M 6 T 7 W. 8 T 9 F10 S11	30.12 30.13 30.03 29.92 29.91 30.09 30.19	69 72 74 78 72 66 61	84 84	60 60 13 67 62 56 56	64 60 58 65 87 63 54		58 58 58 67 87 56 56	W. W. W. S.W. W. N.W.	W. S.W. S.W. S.W. N.E. N. S.E.	12 5 5 8 7 6 5	5 13 16 10 10 9 10	O. C. C. R. C. C.	C. C. O. R. C. C.	.51
													.	.53

*O., cloudy; C. clear: F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., anow. † Indicates trace of rainfall. 63 Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, AUGUST 11, 1894.

	-ndc	the	der years.	Percentage of deaths from					
Cities.	Estimated population.	Reported deaths	Deaths under	Infectious diseases.	Consump- tion.	Diarrhoal diseases.	Typhoid fever.	Diphtheria and croup.	
New York	1,956,000	769	378	27.56	10.40	13.20	1.30	4.84	
Chicago	1,438,000	. —		i —		-	_	_	
Philadelphia .	1,139,457	424	194	23.01	8.64	13.44	1.68	4.56	
Brooklyn	1,013,000	424	206	28.80	11.76	18.96	1.68	6.00	
St. Louis	540,800	-	-	-	_	! . !		_	
Boston	501,107	252	132	38.72	7.48	29.92	2.64	8.52	
Baltimore	500,000	_	_				- 1	-	
Washington .	285,000	93	25	23.76	7.56	9.72		3.24	
Cincinnati	325,000	129	52	15.40	7.70	10.00	1.54	.77	
Cleveland	325,000	159	104	87.80	5.67	26.46	3.78	_	
Pittsburg	272,000	-	_	_	_	_	-	_	
Milwaukee	265,040	33	16	21.21	6.06	6.06		-	
Nashville	87,754	31	17			12.92	6.06	_	
Charleston	65,165	31		19.38	16.13	12.82	6.26	_	
Portland	100,410	22	16	£4.60	_	40.95	13.65	_	
Worcester	92,233	- 22	10	62.00	_	10.00	13.00	_	
Fall River	90,613	83	23	63.63	9.09	60.60		_	
Lowell Cambridge	79,607	37		48.60		35.10	8.10	2.70	
	65,123	31	15	32.25	6.46	22.61	0.10	3.43	
Lynn	50,284	18	انو∸ا	33.33	16.66	27.77		5.55	
immigned	49,900			-	.0.00			0.00	
New Bedford .	47,711	21	12	42.84	4.76	42.84	_	_	
Holyoke	43,348	_	_					_	
Brockton	33,939	8	2	12,50		12.50	_	_	
Salem	33,155	22	8	22.70	4.54	18.16	4.54	_	
Haverhill	32,925	6		16.66	16.66	_	_	_	
Malden	30,209	12	3	33 .33	16.66	16.66	- 1	_	
Chelsea	29,806	20	5	5.00	5.00	5.00	- 1	_	
Fitchburg	29,3-3	10	8	40.00	_	40.00	-	-	
Newton	28,837	-	_	_	_	_		_	
Gloucester	27,293			-	l .	-	- 1	_	
Taunton	26,555	27	11	-	14.80	- 1	-	_	
Waltham	22,058	3	1	33.33		33.33	1111111111	_	
Quincy	19,642	_	-		_	-		_	
Pittsfield	18,802	5	5	20.00	-	20.00	-		
Everett	11,545	7	2	28.56	28.56	14.28	-	-	
Northampton .	16,331	5	2.	40.00	60.00	40.00	-	_	
Newburyport .	14,073	6	2	16.66	16.66	16.66	-		
Amesbury	10,920	1	0	_	-	_	!	_	

Deaths reported 2,760: under five years of age 1,235; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 784, diarrheal diseases, 529, consumption 262, acute lung diseases 153, diphtheria and croup 97, whooping-cough 59, typhoid fever 49, scarlet fever 22, cerebro-spinal meningitis 11, malarial fever 6, measles 5, small-pox 2.

ti, measles 5, small-pox 2.

From typhoid fever Philadelphia 11, Washington 9, New York 6, Brooklyn 5, Boston and Pittsburg 3 each, Cincinnati and Cleveland 2 each, Nashville, Lynn, Somerville, Haverhill, Malden, Chelsea, Everett and Brookline 1 each. From scarlet fever Cleveland 7, New York 6, Boston 2, Philadelphia, Brooklyn, Lowell, Cambridge, Somerville, Malden and Medford 1 each. From cerebro-spinal meningitis New York 6, Cincinnati 2, Boston, Washington and Lynn 1 each. From malarial fever New York and Nashville 2 each, Brooklyn and Cleveland 1 each.

From measles Brooklyn and Cleveland 2 each, Pittsburg 1. From small-pox New York and Philadelphia 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending August 4th, the death-rate was 17.2. Deaths reported 3,455: acute diseases of the respiratory organs (London) 144, diarrhea 328, measles 99, diphtheria 80, whooping-cough 66, scarlet fever 35, fever 23, small-pox (London 5, Birmingham 2, Manchester 1) 8.

35, fever 23, small-pox (London 5, Birmingnam 2, manufacture 1) 8.

The death-rate ranged from 8.4 in Derby to 29.0 in Preston; Birmingham 14.5, Bradford 13.3, Croydon 13.5, Hull 15.0, Leeds 16.2, Leicester 17.4, Liverpool 27.8, London 17.6, Manchester 21.8, Newcastle-on-Tyne 15.5, Nottingham 17.0, Plymouth 20.2, Portsmouth 9.8, Swansea 10.4, West Ham 14.0.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 11, 1894, TO AUGUST 17, 1894.

Leave of absence for one month, to take effect upon the com-pletion of his present duty at the Fort Thomas Rifle Range, is hereby granted to Captain William J. Wakeman, assistant surgeon.

MAJOR CURTIS E. PRICE, surgeon, upon the expiration of his present leave of absence, is ordered to Fort Supply, Oklahoma Territory, for duty at that station, relieving CAPTAIN WM. H. CORBUSIER, assistant surgeon.

CAPTAIN CORBUSIER, on being relieved by MAJOR PRICE, is ordered to New York City, N. Y., for duty as attending surgeon and examiner of recruits, relieving CAPTAIN WM. C. SHANNON, assistant surgeon.

CAPTAIN SHANNON, on being thus relieved, will report in person to COLONEL C. H. ALDEN, assistant surgeon-general, president examining board, for examination for promotion.

CAPTAIN EDGAR A. MEARNS, assistant surgeon, will be relieved from duty with the commission appointed for the location and marking of the boundary between Mexico and the United States and ordered to Fort Myer, Va., for duty, relieving CAPTAIN JOHN L. PHILLIPS, assistant surgeon.

CAPTAIN PHILLIPS, on being thus relieved, is ordered to Fort McKinney, Wyoming, for duty at that post, relieving CAPTAIN GEO. E. BUSHNELL, assistant surgeon.

CAPTAIN BUSHNELL, on being thus relieved, ordered to David's Island, N. Y., for duty, relieving CAPTAIN SAMUEL Q. ROBINSON, assistant surgeon

CAPTAIN ROBINSON, on being thus relieved, ordered to Philadelphia, Pa., for duty as attending surgeon and examiner of recruits.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U.S. NAVY FOR THE WEEK ENDING AUGUST

 ${\bf E}{\bf D}{\bf W}{\bf A}{\bf R}{\bf D}$ Kershner, medical inspector, ordered as fleet surgeon, North Atlantic Station.

L. G. HENEBERGER, surgeon, ordered to Marine Rendezvous, New York.

N. H. DRAKE, surgeon, from Marine Rendezvous and to Receiving-ship "Franklin."

B. S. MACKIE, surgeon, from the "Franklin" and as fleet surgeon, European Station.

C. P. KINDLEBERGER, assistant surgeon, ordered to Naval Laboratory and Department of Instruction.

T. N. Pennose, medical inspector, from Norfolk Hospital and to special duty repairing and renovating New York Hospital.

C. J. CLEBORNE, medical director, from Naval Hospital, Chelsea, and to Naval Hospital, Norfolk.

A. A. HOEHLING, medical director, from special duty, Washington, D. C., and to Naval Hospital, Chelsea, Mass.

B. H. Kidder, medical director, ordered to report to chairman Senate Committee investigating Ford Theatre disaster.

RECENT DEATH.

WILLIAM C. DABNEY, M.D., Professor of Obstetrics and Medicine at the University of Virginia, died at Charlotteville, August 20th, aged forty-five years. He was a member of the Association of American Physicians.

BOOKS AND PAMPHLETS RECEIVED.

Announcement, Session of 1894-95, the Council Bluffs Medical College, Council Bluffs, Iowa.

A Brief Consideration of the Cases of Appendicitis Occurring in the Practice of Professor William H. Carmalt. Reprint. 1894.

Original Articles.

ABDOMINAL DRAINAGE.1

BY ERNEST W. CUSHING, M.D.

THERE is no practical question connected with abdominal surgery on which opinions differ more widely It would seem than on that of abdominal drainage. that by this time there should be a reasonable unanimity in the opinions of the leaders of the profession on this subject; and yet their practice differs widely, while their statements, and especially the statements of their followers, diverge even more widely than Three years ago, in Berlin, I had the their practice. honor, in conjunction with Dr. Sänger, of bringing this subject of abdominal drainage before the Tenth International Medical Congress, and I naturally examined pretty carefully the practice of the best German operators on this point. I was lead to the conclusion that the use or omission of drainage is merely a part of a system, and not an arbitary decision at the end of an operation. Abdominal drainage is very little used in Germany, except by Sänger; and with the mighty influence which German thought and example is exercising among the profession everywhere, the German influence is becoming marked in all countries, and not the least in New York City, which, it must be remembered, has the largest German population of any city in the world but Berlin and Vienna, with a particularly brilliant representation in our profession by German Medical Societies and journals, and especially by a number of gentlemen who are very distinguished in abdominal surgery and whose names will readily suggest themselves to my hearers.

On the other hand stands the English school of abdominal surgery with its brilliant leaders, its admirable results and its splendid contributions to the progress of abdominal surgery. Naturally, recent professional opinion in this country has been largely moulded by English thought and writing, and by the fact that so many of our leading gynecologists have studied the methods and watched the operations of the great English surgeons. We have, therefore, besides the German school, the Anglo-American school of practice; and it may be interesting to notice wherein lie the differences between them. In the first place, the Germans, starting out with a positive faith in the theory of bacteriological infection of wounds and of the abdominal cavity as the cause of septic troubles, set about to prevent any such infection with true German thoroughness. Abdominal surgery is confined to a few men; it is performed in buildings made as perfect as science can devise or money can furnish; the clinical operator has a staff of highly trained assistants, who remain for a period of from three to five years connected with the clinic. Discipline prevails which is military in its exactness. The abdominal work is, on the whole, of a rather simple nature to that which we have in our large cities, for the reason that, as the hospitals are supported by the States, there is a large proportion of hardy peasant women with tumors, who are sent immediately to the great clinics, while the rarity of abortions and the control and careful treatment of venereal diseases render pelvic suppuration far less common than is the case here. Speaking broadly then, the German surgeon has on

¹ Read before the Surgical Section of the Suffolk District Medical Society, April 4, 1894.

the average simpler cases, stronger patients, better assistants, a better operating-room, a far greater certainty of aseptic surroundings, than is the case in this country. His methods are naturally based on all these facts: he makes a long incision; he and his assistants ligate with catgut all adhesions; everything is done by sight; and when the tumor is finally removed, there is little chance that there will be any bleeding, for everything is tied. Then the abdomen is closed, and the results are excellent. Even in cases where collections of old blood are evacuated or where pus-tubes during removal burst and discharge their contents, similar methods are followed. The use of the Trendelenberg position, with a large incision, makes pelvic surgery more certain, and the removal of all foreign matter can be more surely accomplished, than when the small incision is used, unless the latter is followed by irrigation; even in unclean cases, therefore, most of the German operators dispense with irrigation, and their results appear to them satisfactory, although I gravely doubt whether they would be able to pursue any such methods, if they really had such a proportion of difficult cases of pelvic suppuration to treat as we have here, and in the same class of emaciated women of little vitality.

To sum up, the omission of drainage is based upon the use of a large incision, complete tying of all adhesions with catgut, and entire removal of all foreign matter from the abdomen without irrigation, the assistants being skilled, the preparations perfect, the operating-room ideal, the operator being a clinical professor of long experience and particular skill, and the patient being, on the average, robust and in good condition.

The Anglo-American school of abdominal surgery has grown up under the auspices of men who are practical rather than theoretical. While not denying the facts demonstrated in the bacteriological laboratory as to infection by pathogenic micro-organisms, they have insisted that we must consider the field of infection more than the infecting agent, and, speaking broadly, their efforts have been to remove the pabulum of germs, besides taking reasonable precautions to prevent any infection of the abdominal cavity. They have been extremely sceptical as to the possibility of keeping all microbes out of the abdomen, but have pinned their faith on the ability of the living tissues to resist the subtler forms of atmospheric infections provided all dead and foreign matter were removed, the pelvis kept dry, and the vitality of the patient maintained. Recognizing the fact that most cases of acute sepsis after abdominal operations are found to have a collection of decomposing bloody fluid in the pelvis, the inference is obvious, that, if this fluid had been removed, the patient might have recovered; moreover, as it is evident that this bloody fluid ought to have been absorbed by the peritoneum before decomposition occurred; the practical rule followed is to avoid everything that would chill or chafe the peritoneum, or in any way weaken its absorptive powers or injure its serous surface. From this came the advocacy of the short incision and the use of irrigation instead of sponges for the removal of blood, pus, the contents of cysts, or other foreign matters in the abdominal cavity; also in the endeavor to shorten the time of operation, it was found practicable to separate adhesions very largely by the fingers without the use of ligatures, even although there might be some bloody

oozing afterwards, so long as the latter would be removed by the drainage-tube. It should be remembered that the great development of abdominal surgery in England, and especially in America, during the last ten years has been in surgical treatment of diseases of the uterine appendages and in hysterectomy, as well as in surgery of the kidney, appendix and intestine. The treatment of tumors has not changed, and is much the same everywhere, but the new surgery of the uterine appendages has so completely overshadowed that of ovarian tumors, that active operators do not find that one-fifth of their cases of laparotomy are performed for the removal of ovarian tumors. At least, that is my experience; and I presume it coincides with that of other gynecologists.

Our subject may be divided into indications and technique. The chief indication for the use of drainage is the prevention of any accumulation of the fluid in the pelvis. It is certain that in the cases of laparotomy which die of acute sepsis on the second, third or fourth days, there is always or usually found a bloody accumulation, or puddle, which seems to be the cause and focus of septic intoxication. This accumulation can be prevented by the use of a drainagetube. It is true that in most cases the peritoneum is able to absorb all fluids; and usually, with reasonable care and attention to cleanliness, such an event may be anticipated with considerable confidence. On the other hand, the peritoneum sometimes fails to do its duty in this respect, and then bloody serum accumulates, decomposes and poisons the patient.

It is impossible to attribute all such deaths to infection at the time of operation. Long series of cases in the hands of careful operators have shown that with every precaution such accumulation of fluid with consequent sepsis, will occasionally occur, while the frequent use of the drainage-tube even in light cases, has taught us that even after the simplest operations, such as removal of unadherent uterine appendages, there is sometimes a very profuse sanguineous effusion for a day or two, probably from the stitch-holes of the abdominal incision, or from a vein in the pedicle where it is transfixed.

The reasons for this use of drainage may therefore be cast somewhat into the form of a syllogism, as fol-

After every laparotomy involving an operation on the pelvic organs there may be a profuse sanguineous discharge, or even a serious hemorrhage.

After every laparotomy the peritoneum may fail to absorb such a discharge. There may be no evidence that dangerous hemorrhage is occurring.

The failure to absorb such a discharge, if it occurs, is fatal. Concealed hemorrhage if undiscovered and unchecked is fatal.

The drainage-tube properly placed and cared for will remove this dangerous effusion as fast as it occurs. It will give timely evidence of concealed hemorrhage.

Therefore, drainage should be used in all cases of laparotomy involving an operation on the pelvic organs. As usual, however, the general rule and principle is subject to limitations and exceptions, some of which are as follows:

The use of a drainage-tube is a decided inconvenience. If carelessly handled, it may be a source of secondary infection, with formation of exudates. If

the origin of a fecal fistula, by pressure, or of a suppurating abdominal wound, or a sinus may remain in the track of the tube. Its use greatly increases the necessity of skill and attention in the treatment, and adds to the discomfort of the patient for a day or two after the operation. By pressure on the intestine, unless removed in time, it may cause an obstruction, even with fatal result. The liability to subsequent hernia is said to be somewhat increased.

This is a formidable list of objections; and yet all these accidents may be avoided by skill and conscientons care in the use of the tube, and a fatal result from such use in proper hands is an extremely infrequent occurrence. No such accident has ever occurred to me.

On the other hand, acute sepsis after laparotomy is an accident so dreadful and so irremediable that it is far more to be feared than the lesser and more remote evils resulting from the use of the tube. In these days it is more and more difficult for the conscientions operator to reconcile himself to the death of a patient by sepsis after operation. It ought almost never to occur. Experience has shown that those who die ought to have been drained, and that in long series of cases those who are drained die less frequently than those who are not.

The result of the compromise between the reasons for and against drainage has been the establishment of the following indications for drainage:

- (1) The presence of freshly separated adhesions, or of voluminous pedicles, or of rents or incisions in the pelvic peritoneum which have required many stitches; in fact, of any condition which may probably lead to hemorrhage or to oozing of bloody fluid.
- (2) The fact that pus or urine or fecal matter, or the contents of cysts, or much blood has escaped into the abdominal cavity. Such a circumstauce should always be followed by free irrigation with pure hot water, and the use of drainage.
- (3) The perforation or incision of the intestine or bladder during operation, or a sloughy condition which makes it probable that perforation will occur. Even when an opening into these viscera found or made during operation is carefully sutured, experience shows that patients often recover with a fecal or, as the case may be, a urinary fistula, who would presumably have died without drainage. Such fistulæ heal eventually under proper treatment.
- (4) The presence of masses of exudates, or of stiff walls of cavities from which diseased organs have been enucleated, which do not permit the intestines to snugly fill the polvis and which would offer a cavity where fluid could accumulate.
- (5) Almost any condition, such as shock or weakness, which has required very rapid termination of a difficult operation, in which case the abdomen will usually be full of hot water.

There are no special contraindications to drainage. The general considerations mentioned above prevent its use where it is not needed; but practically those operators who use the drainage-tube learn to trust in it, and when there is any doubt, they drain.

The advantages are real, immediate and indispensable. The disadvantages are mostly theoretical, remote and preventable.

It will thus be seen that drainage used after irrigaincorrectly placed or left too long in position, it may | tion is particularly associated with modern pelvic surfail of its purpose. It may even, if wrongly used, be gery. It is seldom necessary after ordinary tumors,

but indispensable in many cases of laparotomy for salpingitis, ectopic gestation, evacuation of abscesses, intra-ligamentary cysts, etc.

It is especially advantageous for the man who operates with few and ill-trained assistants, without the aid of the elaborate preparations of a thoroughly or-

ganized hospital.

It is useful in the weak, and in those where we have to fear that the stomach and bowels will not behave well, and that thus the peritoneum will fail to absorb any fluid which may be effused.

Why what is so salutary in America and in England is not thought necessary or useful on the Continent, I hope to learn as a result of the discussion of this paper.

In regard to the technique of drainage, of course there are differences in the practice of various operators, but there is substantial unanimity concerning the

chief points to be observed.

In the first place a straight tube should be used, because it is easier to clean, and sometimes it is important to turn it on its axis without removing it. It is also far easier to introduce and to remove a strand of absorbent cotton or gauze through a straight tube than through a curved one, and often it is very desirable to turn the cotton-holding probe on its axis in order to wipe out the tube or to remove small clots of blood from the space of Douglas. Tubes which have the same curvature everywhere, like those used by Dr. Sänger, may sometimes be valuable, but those which have a curve only at the lower end are objectionable in every respect. The tube, being straight, should be well annealed, open at the lower extremity, and provided with a flange at or near the top. The lower two inches should be perforated with fine apertures, so small that the omentum or intestine cannot become entangled therein, and yet large enough to permit of the free passage of blood or secretions. The tube should be perfectly smooth inside and out. It seems hardly necessary to specify these attributes of a good drainage-tube, but yet it is very difficult to find one in the shops which fulfils all these conditions. A collection of unsuitable tubes is here shown, as well as those which I am accustomed to use, made after the model of those employed by Bantock. The latter are two-fifths of an inch in diameter, and have a calibre just large enough to admit a probe wrapped with cotton, or a small rubber tube. They are in four lengths - five, six, seven and eight inches respectively.

Operations which require drainage usually demand irrigation of the abdominal cavity; and for this pure hot water is to be used, preferably distilled water or that which has been boiled and strained. No antiseptic should be added to the water (although some think it is well to add common salt, 0.6 per cent., or 16 gr. to the quart), which is to be poured rapidly into the abdominal cavity by means of a funnel and rubber tube, with an end-piece of glass or metal having openings sufficiently large to permit of a free flow of water.

Irrigation is to be continued until the fluid returned is clear or nearly so, making sure that opportunity is given for all clots to escape; then, without attempting to remove the water from the abdomen, the tube is to be carried to the bottom of the space of Douglas, and sometimes a second tube or a packing of gauze is required to drain some particular pocket or cavity with

of fluid may then be removed through a small rubber tube inserted in the glass drain. A piece of thin rubber sheeting, or "dam," is then stretched over the upper end of the tube, which projects through a small hole in the middle of the sheeting. This prevents any soiling of the wound by fluids which escape through

The subsequent care of the drain may vary according to the system and the ingenuity of each operator; but any method, to be efficient, must ensure that the space of Douglas be kept dry, and that the drain be kept clean, and that no infection be carried into the peritoneal cavity. My own method is as follows: When the patient is in bed, a piece of rubber tubing about eighteen inches long, with a lateral opening close to the lower end, is introduced into the glass drain until it reaches the bottom of the latter. All fluid which can be extracted by the aid of a syringe is then removed, the rubber tube remaining in place. Everything about the dressings being now made dry and clean, the upper end of the drain is covered with clean, crumpled gauze, in which is enfolded the piece of rubber tube which runs down through the glass drain. The nurse has instructions to suck the outer end of this rubber tube, without disturbing its position, by means of a small syringe, every ten minutes at first, and afterwards every quarter or half an hour, according to the amount of fluid which is obtained. In this way a large amount of bloody liquid is often obtained, while the patient is not disturbed in the least, and serious hemorrhage is at once detected. After a lapse of a period varying from one to eight or ten hours, the rubber tube is removed and the glass drain is carefully dried by means of a wire wrapped with absorbent cotton or iodoform gauze, until no more fluid is absorbed; then a rope of loosely twisted absorbent cotton, or a strip of iodoform gauze an inch wide is pushed down to the bottom of the drain by means of the wire. This usually remains in place for two hours, when the same process is repeated; and the intervals are gradually increased to three or more hours, as the secretion diminishes. In most cases if all goes well, on the second or third day the secretion will be scanty and straw-colored; and when this favorable change is noticed, and not sooner, it is time to withdraw the glass tube. It is not best to withdraw the drain earlier than thirty-six hours after the operation, since the secretion sometimes diminishes after about twelve hours, and then becomes quite free again during the period of reaction. I find it convenient to introduce a piece of clean, boiled rubber tube through the glass drain, and to withdraw the latter, slipping it up over the former, so that when the glass is out the rubber tube is left in its track. A strip of iodoform gauze may be used in the same way. Whichever is used, is then pulled up an inch or two, cut off flush with the dressings, and fastened with a safety-pin. It is shortened half an inch morning, noon and evening, until it is thus all removed. If everything has been kept clean, there is no trouble about the healing of the wound, and no tendency to formation of fistulæ.

Septic infection of the wound may be avoided by clean fingers, clean cotton or gauze and clean wire. As a matter of fact, wounds do very well, and tubes do not become infected if ordinary absorbent cotton is stiff walls. The abdominal wound is closed around taken from a roll as it comes from the manufacture. the tube, allowing the latter to project through that and if fingers and instruments are well scrubbed with part of the wound where it lies most easily. Excess soap and water. The scrupulous surgeon will prefer, however, to sterilize his cotton and gauze by steaming found where it can be drawn out, and starting from or baking them, and will dip his hands in sublimate solution after washing them. The main thing, however, is to prevent the accumulation of fluid in the peritoneal cavity; if the drain is so placed and so cared for that this is accomplished, the patient will recover, even after desperate and gruesome operations. On the other hand, if drainage is not used, and the fluid accumulates, and for any reason the peritoneum fails to absorb it, the patient will surely die in spite of all the refinements of antisepsis.

It remains to consider certain cases in which drainage with the glass tube is not sufficient; these are those cases in which there is free oozing from some points deep in the pelvis, such as the bed of a pyosalpinx, an extra-uterine pregnancy, or a tumor of the broad ligament, and in which the condition of the patient is such that a further loss of blood would be disastrous and a prolongation of the operation would be unwarrantable. There are also certain cases where it is desirable to prevent the intestines from falling into a cavity which is wholly or in part lined with a suppurating membrane, or where a perforation of the bladder or intestine has been found or made so that a fistula may reasonably be expected; in these cases packing with iodoform gauze is of the greatest service, and the best way of employing this is certainly by the method of Miculicz. This is applied in the following manner: The centre of a large square of iodoform gauze, from two to three feet on the side, is seized with the clamp or sponge-holder and pushed to the very bottom of the cavity to be drained; the fingers of the left hand are now carried inside of the sack thus formed, and there expanded so that the gauze is spread over every bleeding point and pushed into any suspicious cavity. Strips of iodoform gauze, three inches wide and a yard long, are now pushed down over the fingers, using a clamp or other smooth instrument until the cavity is filled; this usually requires from three to five such strips. I usually employ a glass drainagetube reaching to the bottom of the pelvis behind the gauze packing, in order that the irrigation fluid and bloody oozing may be rapidly withdrawn during the first twelve hours after the operation, after which the glass tube can be taken out. Nevertheless, this use of a glass drain is not customary, as the gauze packing will remove a large amount of fluid in the pelvis by capillary attraction; it is therefore usually covered with a mass of crumpled sterilized gauze to absorb this fluid. I think it is better, however, to wrap a piece of rubber dam around that part of the gauze packing which is external to the wound, lengthening it if necessary by pinning to it a piece of moist gauze, so that the whole can be carried between the legs of the patient, or at one side, into a mug which will receive the drainage fluid. This modification makes it much easier to keep the bandages and dressings dry and clean, and facilitates drainage by adding the principle of the syphon to that of capillary attraction.

The strips of gauze should be removed from the sac after from twenty-four to forty-eight hours, the sac itself on the fourth or fifth day; it is not well to try to remove it by means of a string attached to the centre, as recommended by Miculicz, at any rate it cannot be done readily when the neck of the sac is so small as I make it. On the fourth or fifth day, however, by gently unfolding or pulling on the edges of the sac, first at one point and then at another, the place will soon be 1594.

this point the whole can be gently removed, the cavity syringed with peroxide of hydrogen, and then a fresh strip of gauze put into it. It is astonishing how rapidly the cavity closes and the abdominal wound unites. I have used this method of packing in a large number of difficult and serious cases, and I have been so thoroughly satisfied with it that I have no hesitation in employing it.

I shall say little in regard to draining the abdominal cavity through the vagina. There is no doubt but that it a useful procedure in vaginal hysterectomy and sometimes in total extirpation of the uterus; but, as a rule, where the abdomen has been opened from above, I prefer to use drainage through the abdominal wound, because the vaginal drainage is neither so efficient nor so convenient, nor yet are we so certain of draining the pouch of Douglas while we have to depend on capillary attraction to raise the fluid to the level of the perineum. It is, moreover, difficult to keep the capillary drain clean and away from the infection when it protrudes from the vagina.

I could say much more about drainage; but it is not necessary, for it is impossible in a written communication to explain all the little points on which a successful use of it depends. It is a practical refinement of the art of surgery of the highest order of skill and of the greatest possible importance, and it will serve well those are content to study its details with care and thoroughness. Its advantages are evident to those who know best how to use it; of its disadvantages the contrary may be said.

NOTE ON FRACTURES OF THE HUMERUS AT THE ELBOW-JOINT.1

BY CHARLES W. DULLES, M.D., PHILADELPHIA.

THE treatment of fractures at the lower end of the humerus is one of the well-recognized difficulties in surgery. The reason for this is chiefly the complicated character of the elbow-joint, the number of bones entering into it, the anatomical features of the joint, and the disturbance of function which results from slight displacements. The danger of permanent stiffness of the joint used to be regarded as one of the most serious features of these cases; but in recent years this danger seems to be more usually avoided, and mere stiffness is not feared as it once was. The point in regard to the treatment of these fractures which now attracts most attention is the very important one of preserving the normal inclination of the plane of the joint surface of the humerus to that of the principal axis of its shaft. This forms on the radial side a moderately acute, and on the ulnar side a moderately obtuse angle, resulting in a slight angle between the axes of the forearm and of the upper arm in the position of extension, which contributes very materially to the usefulness of the arm for a variety of purposes, and especially for carrying weights in the hand. The importance of this has been frequently and strongly emphasized of late years, and has to a certain extent dominated the treatment of injuries near the elbow-joint. Another source of trouble in fractures at the lower end of the humerus, to which as much attention should be paid, is rotary displacement of the

fragment or fragments of the humerus. The result of this displacement is sometimes exceedingly unfortunate, the external condyle, for example, being displaced in a direction forward and toward the middle line (ventral) producing a deformity which is not uncommon, and which destroys what is called the "carrying-angle" as effectually as the more commonly recognized upward displacement of the internal condyle, because it destroys the normal relation of the radius to the humerus and to the ulna, and materially restricts the motion of supination.

To understand the condition involved in fractures at the lower end of the humerus, it is necessary to study the normal mechanical conditions of this joint. Its complicated character makes verbal description almost impossible; but certain points, easily demonstrable from the bones, ought to be understood and remembered.

The first of these is the well-known obliquity of the plane of the joint, by which the really articulating bone —the ulna—in a position of extension of the forearm, with the arm hanging at the side, is directed somewhat away from the axis of the body, so that the elbow can get a purchase against the hip, and objects carried in the hand do not touch the leg; while, on flexion, the hand is carried across the line of the axis of the humerus in the direction of the chest in a manner which has a number of practical advantages. other point which I have not yet found referred to in any work on surgery, general or special, but which is familiar to observant anatomists is, that the head of the radius, when the forearm is extended, is not in contact with the capitellum — the articular surface of the external condyle of the humerus. Freedom of the motions of pronation and supination is favored by this fact, and at the same time the joint is to a certain extent protected from accident. With the arm extended and the forearm strongly pronated, the head of the radius is at its greatest remove from the capitellum. With the forearm semi-flexed and semi-pronated, the head of the radius rests against the capitellum; while if flexion of the forearm be carried further, there occurs a condition which I have taken this occasion to describe particularly. I do not know that it has been as yet described, although I know that the conclusion to which a study of it has led me coincides with what has been done before; and I have been interested to ascertain, by a correspondence accidentally started, that Dr. H. L. Smith, of Boston, has been brought to similar conclusions by studies undertaken before he practice.

The point which I wish to make is, that when the forearm is semi-prone and fully flexed - that is, until flexion is stopped by the impact of the coronoid process against the humerus in the coronoid fossa — the bones of the forearm act as a lock to hold the lower end of the humerus, in case of an intra-condyloid fracture, in a correct anatomical position, and that in no other position of the forearm is this the case. If we take the bones in this position we find that the olecranon and coronoid processes, with the ridge dividing the greater sigmoid cavity, control the inner part of the elbow-joint, preventing motion laterally, antero-posteriorly, or rotary, while the head of the radius rests against the capitellum, and its ligaments prevent displacement of the external condyle in any direction by the condition of tension in which they are found when elbow-joint.

the forearm is fully flexed and semi-pronated. To say that the bones of the forearm lock the inner and outer portions of the lower end of the humerus in a correct anatomical position, covers the essential points in the treatment of a fracture; and to understand the full significance of the expression requires only a knowledge of the anatomy of the elbow-joint.

As I wish to be brief, I will limit myself to this statement, adding only a particular reference to the obliquity of the plane of the joint and the danger of rotation of one of the fragments, as alluded to above.

To meet the indications suggested by these anatomical considerations, I apply from the fingers to the shoulder, smoothly and with moderate tension, a soft flannel bandage, avoiding undue pressure upon the anterior angle at the elbow by having the forearm flexed and semi-pronated while the bandage is applied. After this the bend at the elbow is filled with some cotton, a splint is laid against the arm with very moderate cotton padding — not bound on with a bandage, but just laid loosely on — and the whole is enclosed with a good roller bandage. This treatment I have found to be entirely comfortable to the patient, and to give admirable results.

The essential feature of the method which I propose is, that the forearm shall be semi-pronated and fully flexed, with the intention that the ulna and radius shall then hold their corresponding parts of the joint-end of the humerus in a correct anatomical relation to each other. The mode of securing the arm is a detail which need not be discussed here, as any one who treats many elbow-joint injuries knows that it is impossible to fix inflexible rules for their management.

Any splint may be used which will maintain the forearm in full flexion upon the upper arm. For this purpose a splint with a very acute angle, to fit either side of the arm, or an anterior angular splint will answer.

With the forearm semi-flexed and semi-pronated, the head of the radius rests against the capitellum; while if flexion of the forearm be carried further, there occurs a condition which I have taken this occasion to describe particularly. I do not know that it has been as yet described, although I know that the conclusion to which a study of it has led me coincides with what has been done before; and I have been interested to ascertain, by a correspondence accidentally started, that Dr. H. L. Smith, of Boston, has been brought to similar conclusions by studies undertaken before he knew that I was working on this subject and by actual practice.

The chief difficulty in following out a theoretically correct method at the elbow-joint is due to the swelling which, in this situation, comes so quickly and often becomes so considerable. My own experience leads me to believe that it is desirable to effect reduction of this swelling by a carefully applied flannel bandage, assisted with wool or cotton, so as to produce equable pressure. This may be for twenty-four hours before applying the splint which is to maintain the arm in the position above referred to; and while it is done that assisted with wool or cotton, so as to produce equable pressure. This may be for twenty-four hours before applying the splint which is to maintain the arm in the position above referred to; and while it is done that assisted with wool or cotton, so as to produce equable pressure. This may be for twenty-four hours before applying the splint which is to maintain the arm in the position above referred to; and while it is done that it requires some ingenuity to neatly bandage an arm to a lateral angular splint, but no more than every surgeon may be supposed to have.

This is not the time to dwell upon details which all surgeons understand. The object of this note is to call attention to the fact, as I believe, that, if the forearm be semi-pronated and fully flexed upon the humerus, the head of the radius and the coronoid and olecranon processes of the ulna will hold the inner and outer portions of the lower end of the humerus in a correct anatomical relation to each other and to the bones of the forearm. With all this, it is possible that a T-fracture may turn out badly; but, if it should, this would be in consequence of a displacement at the line of transverse fracture; and I believe the chances of such an accident would be diminished by securing accurate anatomical relations of the bones forming the elbow-joint.

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Clinical Department.

FIVE CASES OF COMPOUND FRACTURE OF THE ANKLE-JOINT.1

BY FRANKLIN G. BALCH, M.D., BOSTON.

THE following cases of compound fracture of the ankle-joint occurred during Dr. Cabot's service at the Massachusetts General Hospital in 1892. I have decided to report them, not that there is anything especially new in the method of treatment, but as showing very good results in cases which seemed to offer very little hope of a useful foot, when first seen in the accident-room. In one case there was a compound fracture of both ankles and a simple fracture of the thigh; in another, a compound fracture of the ankle and a compound fracture of the other thigh; in another, a compound fracture of one ankle; and in the last, a simple fracture becoming compound later from sloughing of the skin over a prominent portion of a dislocated astragalus.

Case I. Joseph C., twenty-two years of age, a teamster by occupation, was brought to the hospital July 12, 1892. His ice-cart had been struck by a train, and he had been thrown out with great force. There was a great deal of shock. On examination, it was found that he had a compound fracture of both bones of the right lower leg, the fracture extending into the ankle-joint. The opening was on the inner side of the ankle. There was a compound fracture of both bones of the left leg and a backward dislocation of the ankle, also compound. There was a simple fracture of the left thigh, at about the middle.

The opening on the right ankle was enlarged, and the wound thoroughly irrigated with a weak solution of corrosive sublimate. Iodoform gauze was used for drainage, and the leg put up on a posterior wire-splint. The left foot was also thoroughly cleaned, the dislocation reduced, and a counter-opening made on the other side, through which a rubber drainage-tube was passed. The dressing was iodoform gauze, and the leg was put up on a posterior wire-splint. The thigh fracture was treated by extension, long side, ham and coaptation splints. Six days later the tube was removed from the right foot. The leg was dressed two days later. The wounds of both ankles healed entirely in a short time, with both feet in good position. thigh was slow in uniting, largely owing to the restlessness of the patient. It had finally become fairly fixed, when the patient ate some kind of a poisonous root which a friend brought in, had an acute attack of gastro-enteritis, with acute mania, and during the attack got out of bed and tried to walk. He got as far as the door and back, but broke up the union He finally got a firm union and pretty thoroughly. left the hospital. Unfortunately, some photographs which were taken of the ankle turned out badly. For nearly a year I lost track of this patient, when he turned up at the hospital one day, walking without crutch or cane, but with a very little lameness, owing to the slight limitation of motion in the right anklejoint. Since that time I have not been able to find

Case II. The second case entered September 3, 1892. Trefley B., a man thirty-eight years old, was thrown from his horse two days before entrance. He

¹ Read before the Surgical Section of the Suffolk District Medical Society, April 4, 1894.

was examined under ether at the time of the accident. and the doctor reported a fracture of the external malleolus, with a dislocation and probable fracture of the astragalus. There was great swelling of the ankle, and but little could be made out at entrance. ankle was very much broadened, with the skin very There was an especially prominent spot anterior to and somewhat above the external malleolus. The leg was put up in a pillow-splint with ice-bags. September 12th the leg was put on a posterior wire-The skin over the prominent spot on the front of the ankle was then necrotic over an area as large as a half-dollar. When the dressing was done on the 25th, the slough had separated, exposing what proved to be the forward articulating surface of the astragalus. Dr. Cabot removed the presenting piece of bone October 14th. It proved to be the astragalus which had been completely broken across in two It was removed quite easily, leaving a deep hole with a few pieces of torn ligaments hanging into The ligaments were carefully cut away, and the cavity packed with iodoform gauze. There was no rise of temperature. The wound closed slowly, and in November the patient went home on crutches. heard from him again in March, 1893. walking on the foot a little and improving. heard from him in the latter part of October, 1893. He had been working since May, and gaining gradually. He complained of some soreness and "prickling" when he started to work after having been quiet for a while, but said it lasted only two or three minutes. I have not been able to see him since he left the hospital.

Case III. The third case was that of Edward J. D., twenty-nine years old, a brakeman. He entered the hospital August 2, 1892, having fallen from the top of a freight car. He said his left foot was crushed by a wheel, but his right leg caught over a brake rod and kept him from being drawn under the truck. A brakeman hastily put on the brake, and in so doing, broke the right thigh.

When seen in the accident-room, he was in a state of severe shock. He was etherized; and on examination it was found that he had a compound fracture of his right thigh, with a compound outward dislocation of his left ankle, fracture of the tip of both malleoli and a compound fracture of the fifth metatarsal. The skin was dissected off from the whole of the outer side of the foot, about half of the dorsum, and for two inches above the external malleolus. The capsule of the joint on the outside and the external ligaments were completely torn away. The condition of the patient allowed of no delay, so the disinfection and dressing had to be done very hastily. A rubber drainage-tube was put through between the heads of the fourth and fifth metatarsals from the dorsum to the sole of the foot, and another on the outside of the foot, draining the pocket made by the skin flap. Dry dressings were used on both the ankle and the thigh. leg was put upon a posterior wire-splint, and the thigh with ordinary Buck's extension. On the 10th the tube was removed from the side of the foot, but the other was kept in until the 21st. On September 7th I grafted a large surface on the foot, where the skin had sloughed, by Thiersch's method; and on the 24th the only open spot was a small granulating space where the tube had been.

The patient was extremely unfortunate about his

right thigh, as he broke up the union several times by falls when he was nearly well. He was discharged wearing a plaster spica December 16th. At that time the left ankle showed a marked tendency to get into the equino-varus position, but could readily be brought into good position, and promised to become all right as soon as he could bear weight upon it. In March the patient wrote me that he had been trying to favor the thigh and had put more weight on the ankle than it could bear, and that it bothered him by turning in under him. I sent him to the hospital to have a varus shoe made. He started to go, slipped, and again broke his right thigh. While he was in the hospital with the thigh, the tendo-Achillis was cut, and the foot brought into good position under ether and put up in a splint. The skin over the grafted area was firm and strong. December 6, 1893, he came over from East Boston to see me. He was wearing a varus shoe, and walked with crutches out-doors. He got on very well without crutches in the house. The tendo-Achillis was still very tense, and he had to wear a high heel. There was very fair motion in the anklejoint, and he thought he was improving steadily. There was some chafing where the iron of the shoe pressed on the grafted area, but it was due to faulty construction of the apparatus.

CASE IV. James C., a laborer, forty years old, entered the hospital July 16, 1892, with the history of having had his right leg caught in the rope of a derrick. He was thrown down and dragged twenty feet to a ring-bolt, where the foot became fast and the rope rau out with a turn about the ankle until the derrick

mast fell to the ground.

Examination showed a much lacerated and contused wound about the ankle and lower part of the leg. The wound was four and one-half inches long by two and one-half inches wide. There was a compound fracture of both the tibia and the fibula into the joint. The leg was disinfected as far as possible, and put upon a posterior wire-splint, with side-splints. No stitches were taken. The dressing was dry, sterilized gauze. The wound suppurated; and four days after entrance the temperature was 101°, and there was considerable swelling and tenderness. Three days later Dr. Cabot operated, removing about half an inch from the lower end of the tibia. A rubber drainage-tube was passed through from one side to the other, and several counter-incisions made to relieve tension. The dressing was iodoform gauze at first, which was later changed to a wet corrosive dressing. The leg was put upon a posterior wire-splint. The sinuses were slow in healing, and the patient was not finally discharged until September 8th, when a small sequestrum was removed from the outer malleolus and a plaster bandage applied.

From the hospital he went to the out-patient department. I saw the patient at my office about a year ago. He then walked with a cane, but carried it more from fear of slipping than actual need. He said the wound had closed soon after leaving the hospital, and that he was walking better each day. At first he could not bring his heel to the ground, but the foot then came down squarely, and there was some motion at the ankle. Forcible flexion and extension gave him no pain, and he complained only of stiffness. He had two extra lifts on the heel of this boot.

Last October the patient again came to my office, walking over from Shawmut Avenue and back during | 1 Read before the Surgical Section of the Suffolk District Medical Society, April 4, 1894.

the noon hour. His work required him to stand all day, and the scar had in consequence broken down in a spot about the size of a quarter, on the inner side of the tibia. The ankle swelled somewhat towards night, but he said this was improving. He had worn no bandage or support of any kind. He was then slightly lame, and probably always will be so, as there is very slight motion in the ankle.

From this series of cases, it seems to me that we

may draw the following conclusions:

(1) That, at any rate in the case of poor patients, it is worth while to try to save the leg, even when the ankle is so severely injured that the chances of a movable joint appear very small. To a poor man the appearance of the ankle, and the slight lameness caused by some loss of motion in the joint, are of little importance in comparison with the expense and trouble of an artificial leg.

(2) That a very good way of treating these fractures is on a posterior wire-splint. This splint allows us to easily adjust the fragments from time to time, as the swelling goes down, while the foot is held firmly in the

right position.

(3) That the best dressing is the dry dressing of sterilized gauze, with iodoform gauze for drainage, when necessary. In certain cases a wet antiseptic dressing will hasten the separation of sloughs; but, as a rule, the dry dressing is to be preferred.

CANCER OF THE SIGMOID FLEXURE, PER-FORATION OF THE CANCEROUS ULCER; DEATH; AUTOPSY.1

BY F. B. LUND, M.D., OF BOSTON.

THE patient was a laborer, fifty-two years of age. When first seen by the writer in August, 1893, he complained of pain in the abdomen and back, constipation, flatulence, and occasional diarrhea. At times he had noticed a little blood in his stools. These symptoms had begun about two years ago, but the blood had not been noticed until lately. About three years ago he had had pain in the region of the bladder and painful micturition. He was examined at the Bellevue Hospital in New York, and told, he says, that his trouble was due to an enlarged prostate. During the last two years his symptoms had gradually increased in severity; and he had been to various hospitals and dispensaries in the city, and had been given cathartics and alkaline diuretics, and also been told that an hypertrophied prostate was the cause of his trouble. There was thought to be a large element of hypochondria in his case. He had obtained no relief, and the constipation had grown worse.

In August, Dr. George H. Monks, who saw him, suspected malignant disease high up in the rectum, and sent him to Dr. W. J. Otis, for a high rectal examination. I saw him with Dr. Otis at this time.

He was of sanguine complexion, and showed no marked cachexia, although he said he had lost much flesh. His stools were not abnormal in shape, and there was a little bright blood passed with them.

On rectal examination, Dr. Otis found nothing except a slight reddening of the mucous membrane and a little mucus and blood. He made the diagnosis of

chronic proctitis. Nothing resembling malignant disease could be seen or felt.

On abdominal examination, however, marked tenderness was found in the left iliac region, and a tumor, which was very hard, irregular in shape, of insignificant size, and apparently fixed to the pelvic brim. He was given Epsom salts, which provoked free catharsis, attended by severe pain, and caused the tumor in part to disappear. A tender mass, however, was left, which was just distinct enough to be felt. After about a pint of water was injected into the rectum no more was retained.

As there was no evidence of syphilis or tuberculosis in the case, a probable diagnosis was made of malignant disease of the sigmoid flexure, or lower part of the colon, and early in September the man was advised to have an exploratory laparotomy done, with a view to the possible resection of the growth or an intestinal anastomosis. He was, however, unwilling to submit to operation; and during October and November the pain, flatulence, etc., increased in severity, in spite of the administration of laxatives. The pain was in some way relieved by the administration of salicylate of soda, and became much worse whenever this was omitted.

On December 26th, having just carried a hod of coal up two flights of stairs, he complained of severe pain in the abdomen, lay down on a bed, vomited copiously and continuously for fifteen or twenty minutes, and died within half an hour, according to his wife's state-

The following day the autopsy was performed by the writer. The abdomen contained a large amount of liquid feces, which had evidently escaped from an opening in the sigmoid flexure, which admitted both thumbs. This opening was surrounded by a ring of hard nodular tissue, continuous with a small nodular mass in the mesentery, which was short at this point (the beginning of the sigmoid flexure, and adherent to the pelvic brim). The liver was normal in appearance, as were the other abdominal organs. The prostate was slightly hypertrophied. There was no dilatation or hypertrophy of the intestine above the cancerous mass, and the intestine just below the ulcer was but slightly constricted, the lumen easily admitting the thumb.

This condition would account for the fact that there was at no time obstruction of the bowel, which is usually the most important, often the first, sign of malignant disease of the colon or sigmoid flexure.

The nutrition of this growth would seem-to have been so poor that it broke down, with perforation of the bowel as a result, before it had attained size sufficient to cause obstruction of the bowel.

The pain in this case was very severe, as its close relation to the great nerve roots of the lumbar and sacral plexuses would render probable. In these sections of the growth, which Dr. W. H. Prescott kindly made, can be seen nerve filaments grasped and probably constricted by the fibrous stroma of the growth. sections are from a nodule in the mesentery and show beautifully the structure of the growth.

The case is interesting from the point of view of diagnosis, as the man's pain had been considered to be due to prostatic hypertrophy, and to be increased by a hypochondriacal temperament. The slight bloody discharge from the rectum was thought to be due to a proctitis or slight hemorrhoidal condition.

been successfully resected at the time at which it was thought of, as it was firmly adherent to the wall of the pelvis, and had probably infiltrated the psoas muscle and the nerve roots at that point.

Medical Progress.

REPORT UPON FOOD, DRUGS AND ARTICLES OF DOMESTIC USE.

BY B. F. DAVENPORT, M.D.

THE following draft for an Act regulating the sale of food and drugs in Great Britain has been prepared by the Council of the Society of Public Analysts, for submission to the Committee of the House of Commerce now sitting to receive evidence on the working of the Food Acts. As containing some valuable suggestions for some future possible improvements in our own Act, the following abstract is presented. The proposed Act could, however, be greatly improved by large adoptions from our own Act.

 Provides for the repeal of all former conflicting Acts.
 The term "food" shall include every article used for food or drink by man, other than drugs or water, or any article intended to enter into, or be used in the preparation of human food, and all flavoring matters and condiments.

The term "drug" shall include medicines for external or internal use.

Court and territorial jurisdiction are here provided for.

DESCRIPTION OF OFFENCES.

3. No person shall mix, color, stain, or powder, or order or permit any other person to mix, stain, or powder, any article of food with any ingredient or material so as to render the article injurious to health, with intent that the same may be sold in that state; and no person shall sell any such article so mixed, colored, stained, or powdered, under a penalty in each case not exceeding fifty pounds for the first offence. Every offence, after a conviction for a first offence, shall be a misdemeanor, for which the person, on conviction, shall be imprisoned for a period not exceeding six months with hard labor.

4. No person shall, except for the purpose of compounding as hereinafter described, mix, color, stain, or powder, or order or permit any other person to mix, color, stain, or powder, any drug with any ingredient or material so as to effect injuriously the quality or potency of such drug, with intent that the same may be sold in that state, and no person shall sell any such drug so mixed, colored, stained, or powdered, under the same penalty in each case respectively as in the preceding section for a first and subsequent offence.

5. Provided that no person shall be liable to be convicted under either of the two last foregoing sections of this Act in respect of the sale of any article of food, or of any drug, if he shows to the satisfaction of the justice or court before whom he is charged that he did not know of the article of food or drug sold by him being so mixed, colored, stained, or powdered as in either of those sections mentioned, and that he could not with reasonable diligence have obtained that knowledge.

6. No person shall sell, to the prejudice of the purchaser, any article of food or any drug which is not of the nature, substance and quality of the article demanded by such purchaser, under a penalty not exceeding twenty pounds.

In any prosecution under this Act for selling to the prejudice of the purchaser any article of food or any drug which is not of the nature, substance and quality of the article demanded by such purchaser, it shall be no defence to any prosecution to allege that the purchaser, having bought only for analysis, was not prejudiced by such sale. octitis or slight hemorrhoidal condition.

It seems improbable that the growth could have of food or drug in question, though defective in nature or in substance or in quality, was not defective in all three respects.

Any drug sold under any name included in the "British Pharmacopæia" shall be required to comply with the description, character and tests for such drug as specified in the latest edition, with amendments, of the "British Pharmacopæia," provided that the drug be not included in the list of exceptions in Schedule II of this Act.

7. No person shall sell any compound article of food or compounded drug which is not composed of ingredients in accordance with the demand of the purchaser, under a

penalty not exceeding twenty pounds.

8. Provides that no person shall be guilty of any such offence as aforesaid in respect of the sale of an article of food or a drug not recognized by the "British Pharma-copeia," mixed with any matter or ingredient not injurious to health, and not intended fraudulently to increase its bulk, weight, or measure, or to conceal its inferior quality, or any article of food or a drug deficient in any material constituent, if at the time of delivering such article of food or drug he shall supply to the person receiving the same a notice, by a label distinctly and legibly written or printed, affixed to the vessel or parcel, and on the outside wrappers of the article or drug, in characters more prominent than any others, upon any label or other thing upon or with such article of food or drug, describing such article of food or drug as a mixture, and naming the ingredients thereof, and their relative proportions, or declaring its deficiency or deficiencies.

It shall be no defence, under this section, to plead the accidental deterioration of the article, or accidental abstraction or spontaneous separation or evaporation of the in-

gredients.

APPOINTMENT AND DUTIES OF ANALYSTS, AND PRO-CREDINGS TO OBTAIN ANALYSIS.

10, 11. These provide for appointment and duties of analysts.

12. Any purchaser of an article of food or of a drug in any place . . . where there is any analyst appointed under this or any Act hereby repealed shall be entitled, on payment to such analyst of ten shillings and six pence, or if there be no such analyst then acting for such place, to the analyst of another place of such sum as may be agreed upon between such person and the analyst, to have such article analyzed by such analyst, and to receive from him a certificate of the result of his analysis.

13 (a). This provides that any medical officer of health, inspector of nuisances, of weights and measures, of a market, or any police constable or other duly authorized person under the direction and at the cost of the local authority appointing, may procure samples, and shall submit the same to the analyst of the district who shall report thereon.

13 (b). This provides for the taking of samples from railway stations, or elsewhere during transit, and for pen-

alties for any hindering thereof.

14. This provides that when samples are obtained for the purpose of analysis, the seller shall be so informed immediately after the sale, and shall be offered a third portion of the sample to be then and there securely marked and sealed up, or otherwise secured for identification. A like portion is to be delivered to the analyst, and the other third retained for future reference.

15. This provides that when the seller does not accept the offered one-third portion, the analyst shall in like man-ner seal up one-half of the sample he receives, and deliver it to the purchaser to be retained for future reference, in case legal proceedings should be instituted. Other provisions are also made for cases where for other special rea-

sons Section 14 was not followed.

16. This provides for samples being delivered to the public analyst either personally, by agent, or by registered post, and provides for the expenses thereof.

17. Provides for the purchase or seizure of samples sufficient for analysis of any article exposed or intended for sale on tender of the usual price thereof, and for penalties for the refusal of sale, or hindering in the taking of samples. Order in Council be rescinded.

18. Provides for a certain form of report upon the part of the public analyst, and that the local authorities shall cause not less than one sample per annum for every one thousand inhabitants within their district to be submitted for analysis. If this last is not done it is to be caused to be done by the Local Government Board, at the expense of the local authorities.

19. Provides for quarterly reports from the public analysts of work done and receipts therefrom, to the local authorities appointing them, who are annually to forward copies of such reports to the Local Government Board.

20. Provides for court proceedings when from the report of the analyst the Act appears to have been violated, that the summons to appear in court shall be served within a reasonable time after the sample was obtained, that is, within twenty-eight days in the case of a perishable article; that the particulars of the complaint, and the name of the prosecutor shall be stated on the summons, which shall not be made returnable within less than seven days after serving. It also provides how penalties imposed shall be recovered.

21. Provides that the certificate of a public analyst shall be prima facie evidence, but that if called by the defence to personally appear his reasonable remuneration and expenses shall be allowed. At the hearing the sealed reserved portion of the sample shall be produced, and the defendant, as well as his wife, may testify if they choose.

22. Provides that the court may have the reserved sealed portion of the sample examined and reported upon by the Office of the Commissioners of Inland Revenue, and imposes all expenses insured thereby upon the party desiring to have it done.

28, 24. Provide for the taking of an appeal to higher courts in cases of conviction under the Act, and for excep-

tions under provisions of the Act.

25. Provides that under certain conditions in case it is shown to the satisfaction of the court that the defendant sold the article, as for the article called for, relying upon a written warranty to that effect, the giver of the warranty shall be held answerable to the complaint, and liable to a penalty not exceeding fifty pounds, while the original deendant shall be discharged.

26. Provides how penalties imposed shall be paid, and to what purposes it shall be applied in sustaining the ex-

penses insured under the Act.

27. Provides penalties for frauds in relation to certificates or warranties concerning any article of food or drug.

28. Provides that this Act shall not diminish rights and remedies of procedure under other Acts against offenders under this Act; and that in suits for breach of contract on sale of food or drug, penalties, together with costs of court and of defence, which had been incurred, may be recoverable in addition to any other damages, if certain conditions are complied with.

EXPENSES OF EXECUTING THE ACT.

29. Provides for the necessary rates or funds for executing the Act.

BOARD OF REFERENCE.

30. Provides for the formation of a board of reference consisting of the chief chemical offices of the Inland Revenue Laboratory and of five others to be appointed for terms of three years, and eligible for reappointment, who shall be nominated one by the General Medical Council, three, being public analysts, by the Local Government Board, and one by the Board of Agriculture. Their pay and times of meeting are provided for. Their duty shall be from time to time to examine and report upon the composition of various food and drugs, to describe, investigate, and devise new or improved methods for their examination, to set forth definitions and exceptions, and to fix limits, and standards of quality and purity, which, on ratification by Order in Council and publication in the London Gazette, shall be binding in law, and continue in force until such



SPECIAL PROVISION AS TO TEA.

31, 32. Special provisions are made for the examination of all teas commercially imported by the Commissioners of Customs at the port of entry.

33-37. Make provisions for certain court jurisdiction, expenses, and legal terms used in the Act.

SCHEDULES I, II AND III.

These are the forms of certificate to be used by the public analyst in making his report; the list of articles bearing a name identical with the "British Pharmacopæia" remedies, yet not required to be of the "British Pharmacopæia" quality; the list of official definitions, limits, and standards of strength and purity adopted by the Board of Reference, such as spirits, as at present defined by the amended Act; milk; water in butter; lard; cheese; vinegar; impurities in tea, pepper, and other spices; drugs.

Reports of Societies.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

C. L. SCUDDER, M.D., SECRETARY.

REGULAR Meeting, Wednesday, April 4, 1894, Dr. Abner Post in the chair.

Dr. Franklin G. Balch presented a paper on

CASES OF COMPOUND FRACTURE OF THE ANKLE.1

DR. RICHARDSON: I should like to say a word about this conservatism in the treatment of joint-fractures, not only the ankle-joint, but others. The results of conservatism in trying to save tuberculous ankles in adults, so far as my experience goes, are very unsatisfactory. The cases of compound fractures which are going to do well I think very soon show what the prognosis is going to be. Septic infection of the joints of the tarsus if they are open, of the joints between the astragalus and the tibia seems to me very unpromising. If once the synovial membranes get thoroughly septic, I think the prognosis is very unfavorable. I believe the conclusions which Dr. Balch has given us are justified by cases, and that we should attempt to save an ankle when it is possible to do so; but I believe we may carry conservatism too far in subjecting patients to the dangers of septicemia if the case goes badly in the early days of the injury. Conservatism has done so much since the application of aseptic principles that we very seldom ought to sacrifice a limb unless the outlook is hopelessly bad from the first. On the other hand, we may go too far if the prospect is gloomy at the outset and if the course of the disease is not favorable very soon. One case in particular always impressed me very much in favor of conservatism in these joint-fractures. That was a case of Dr. Cabot's, in a man past middle life, a compound fracture of the joint which seemed to indicate amputation if ever a case demanded it. I think at the consultation there were several in favor of amputation, and for some reason the patient objected. An attempt was made to save this foot, and it was saved. The ankle is very useful at the present time. That was the most conspicuous example of successful surgery in compound joint-fracture I have seen, and it induced me to attempt to save limbs which I should from previous experience sacrifice. There is a good deal to be said in regard to the point of election in doubtful cases, especially in

¹ See page 210 of the Journal.

persons whose manner of living or constitution predisposes them to bad results, or, I should say, prevents their having good results. I think I have seen a good many cases in which attempts at saving limbs have proved disastrous, not only to the limb but to the life of the patients. I do not think I should try to save the badly comminuted fractures of the ankle-joint in a man whose habits were very bad, or if in the course of a few days there was not a decided tendency toward rapid healing. I think we perhaps do not yet realize what can be done by careful attention to the details of aseptic surgery in the wounds of joints. Certainly in joints with large synovial surfaces like the knee-joint the results are not infrequently disastrous; on the other hand, I have seen very good motion result.

DR. BALCH: One of the cases I spoke of has come to-night. We came near amputating in that case; I got him ready one day to go down. In that case there was a piece taken off the tibia. (Patient shown.)

I have here a piece of the astragalus removed from one of those cases, and a photograph of the leg on the posterior wire-splint.

DR. SCUDDER: It seems to me that these cases of compound fracture of the ankle are extremely interesting in children as well as in adults, and that there should be little dread of obtaining a stiff ankle, especially in children. I have in mind the case of a boy about ten years of age whose ankle was caught in a railroad turn-table while playing, and he received a compound dislocation of the ankle. The dislocation was reduced. At the present time, about six years after the accident, there is no motion at the ankle-joint at all and yet he walks with scarcely a limp. There seems to be in children, where the foot is very supple, a compensatory movement at the medio-tarsal joint which helps to make up for motion lost at the anklejoint. The case of this boy was interesting in that he could walk after such injury without much of a limp.

Dr. Post: These cases seem to me extremely interesting. They illustrate to my mind as well as any cases can the revolution in surgery. Twenty-five years ago every one of these cases would have been amputated. Now they are all saved. It may be, as Dr. Richardson remarked, that some of them would be better amputated; but therein lies one of the beauties of surgery at the present day, that it is possible to experiment on saving them. Most of them can be preserved for a time and amputated secondarily without any very great risk; and certainly a very large percentage of these compound fractures of the ankle do extremely well. There must be a very large number of such cases scattered throughout the city, and they are but part of a great series of cases that have been preserved from amputation of late. It is surprising to see how great a change has taken place at the hospital, particularly in regard to the number of amputations. I had occasion recently to look up the matter, and I find that within the first five years of the existence of the City Hospital, from 1864 to 1869, there were 132 capital amputations. During the last five years there have been but 79 capital amputations; and at the same time the number of patients in the hospital has increased fivefold. The number of patients in the hospital the last year is greater than the whole number of patients in the hospital during the first five years; and at the same time the mortality from amputation has very decidedly decreased. The mortality in the 132 amputations during the first five years was something over 33 per cent. That included a large number of amputations at the shoulder-joint and two or three amputations at the hip-joint. The last five years the mortality all told was 18 per cent., including some three cases where double amputation was performed where death was not to be avoided, and where the total number of deaths was but 13. Two or three additional cases make a great difference in the percentage.

DR. HOMANS: I think the idiosyncrasy of surgeons varies in regard to amputations. I remember when I was in the hospital Dr. Townsend tried to save limbs, and the other surgeons amputated. I saw a man the other day; you could put the finger through the head of the left humerus, and yet he had a perfectly good joint. That was saved, as many of these limbs are, by the obstinacy of the patient. Most compound fractures of the shoulder from a large bullet, comminution of the scapula as well, would be amputated; and I think the element of the character of the surgeon has something to do with it. I have no doubt we save a great many more of these compound fractures than we used to.

DR. E. W. Cushing read a paper on

ABDOMINAL DRAINAGE.2

DR. HOMANS: Dr. Cushing has covered the ground and the methods of using drainage so thoroughly that I have very little to say about it. He has not alluded to the method of putting gauze around outside of the tube, so far as I know. I sometimes do that, particularly in appendicitis; draw out the rubber or glass tube, leaving the gauze to come out later. I think by running some gauze around the tube you can perhaps pull out the tube pretty soon and take out the gauze later. With the Miculicz packing you can do that too.

I regard all drainage as an evil to be avoided if possible. It depends on the wisdom of the surgeon as to when to apply drainage and when not. It is surprising, as Dr. Cushing says, when you put a mass of gauze in the pelvis after operation to see the amount of fluid that comes out; so that I suppose after almost all our operations there is a good deal of fluid that is poured out and absorbed. The other day I had a very large collection of blood following an extra-uterine pregnancy at the end of three weeks; and there was over a pound of blood-clot by weight. The cavity was, I should say, nine or ten inches deep, going down to the side of the rectum and filling the pelvis pretty much. I was obliged to close that without drainage, and I packed it with gauze. The case did remarkably well. I have since thought I could have got along without gauze. Where you put a good deal of gauze in, you have rather a large neck for the sac. The gauze is not always so easily got out. If I find difficulty in getting it out I generally give the patient a little chloroform. You are surprised when the gauze comes out to see the amount of fluid on it and in it. You have probably done right in any case in which you have drained. At the same time I do not think I drain as much as I used to; and I find on taking up my service at the hospital three or four cases of chronic fistula of the abdomen, and I think chronic fistula after abdominal operations is not very uncommon, and it is a difficult thing to heal. A fistula that has been going on three or four weeks is very apt to continue almost indefinitely. Perhaps with more ideal

2 See page 205 of the Journal.

management these fistulæ will not be as common. But we are uncertain when it is better to take out the tube. Take an ordinary case of what we fear will be an infected abdominal cavity from a pus-tube, as you put in your drain, and in the course of three or four days the fluid is sweet and colorless. You take out the tube, and it does very well.

I do not know that there is anything more that I can say - because Dr. Cushing has said so much about it - except that I always dislike to drain if I can avoid it. If you can drain and the cavity becomes sweet after a day or two, supposing it is infected; if you have in your stitches when you close, you feel a doubt whether you had better unite the wound or still keep in a little piece of gauze. I only know that practically, in the hands of different surgeons, there are a good many cases going about of fistulous tracks in the abdomen which are very slow in healing, and some of them I imagine never heal; so that I prefer, if possible, not to drain. If in an appendicitis operation or other operation the cavity is contaminated, you have got to drain. The management of the drainagetubes ought to be very antiseptic. It is one of the most difficult things in surgery to manage a drainagetube so that it won't get infected. In ordinary operations, even with very extensive adhesions, cases where I formerly drained I do not. I had one the other day where the whole sigmoid flexure was adherent to a tumor, a good deal of bleeding; and I hesitated about I should have had to cover so large a surface with gauze that I did not drain, and the woman has done perfectly well.

The question of employing drainage or not employing drainage is one which a person must decide, and try to decide wisely; and if he can avoid drainage, he had better do so.

Dr. Richardson: I think the question of drainage depends entirely on the theory of bacterial infection. It is impossible to demonstrate the presence of microorganisms except in a general way unless you have at hand, as we ought to have in all hospitals, men who can make the demonstration on the spot. I agree with Dr. Homans fully, that drainage should be avoided if it is possible to do so. I find that I use drainage much less frequently than previously. I have not used a glass drainage-tube in any case that I recall for a long time, not even in appendicitis.

The question of drainage must depend also somewhat upon the kind of poison that we are to expect. There are certain forms of peritonitis which are necessarily fatal, I think, without drainage; and there are certain forms of peritonitis which are not necessarily fatal. That depends on the kind of germ that is present, so far as I have been able to observe. Every case of general peritonitis in which some of the more virulent organisms were present has been fatal, in spite of anything I have been able to do; therefore, in a given case if there is good reason to think the peritoneum is infected by rapidly growing micro-organisms of virulent tendency, I think you must drain in every case. I mean that you must drain in every case of appendicitis in which there is extravasation from the appendix. If you watch how rapidly these things grow outside the body, you can infer that they will grow as rapidly inside. With the colon bacillus you will get in about the time the luxuriant growth appears on agar the growth in the abdominal cavity, which is about twenty-four hours.

The main question, it seems to me, is when we shall drain, rather than the methods of drainage. My own belief is that there is very little to be said in favor of one kind of drainage in contrast with another, except in a very general way. I am in favor of sterile gauze drainage. It is a personal matter with me. I do not like and won't use iodoform. I dare say I may be wrong. I dare say I am wrong in attributing death in breast tumors to the use of iodoform and strong chemicals. I do not have them now. I have no doubt that in one case of cancer of the intestine death was hastened by the use of iodoform gauze. Sterile gauze is not poisonous, drains better than iodoform gauze by capillary attraction, and answers every purpose except the escape of the clots.

Considering the question when to drain in operations on the abdominal organs, in the gall-bladder, kidney, tubes, appendix, surgery of the uterus and the ovaries, I think drainage should be used in every case in which there is any doubt whatever whether the fluids escaping are septic or not. Bile is not aseptic always, nor urine always aseptic. They say it is aseptic, and I have no doubt it is frequently. The other day I found in a gall-bladder case that the bile was infected with the colon bacillus; and if we had not drained in that case, I have no doubt the patient would have died with general peritonitis. In gall-bladder surgery in which the gall-bladder can be attached to the abdominal wound, I should not drain. I never use a tube in gall-bladder surgery unless I put it into the common duct or cystic duct, and then I put gauze around it. That gives free drainage through the tube, and the gauze surrounding the tube provides for the escape of the bile around the tube, accidentally or otherwise. think we might bring statistics to show the advantages of one kind of drainage or non-drainage, except that statistics are not always to be relied on. A gentleman has been looking up for me the subject of statistics of operations on the breast. He worked for a week or two looking up all the statistics for the last ten years, and he found that all the authors could always prove whatever they wanted to by their statistics. I think it is in connection with surgery of the tubes that drainage is most important. I never feel safe in sewing up the abdomen when I remove pus-tubes. I believe I agree with Dr. Cushing in the use of drainage in those cases. I believe it is not safe not to drain those cases, because some of them are aseptic and some are not. Some are sterile; the germe have been enclosed so long that they have killed each other, and the fluid is sterile. I have found that true in the appendix which has been shut off some months by obliteration of the canal. In large abscesses of the appendix I have always drained, with one or two exceptions; and in those cases I felt I subjected the patient to an unnecessary risk. I have said that the appendix cases should always be drained unless the appendix is taken in a general peritonitis, and in almost nothing else unout intact.

In intestinal surgery, unless the opening is small and the auture is perfectly secure, I think a little gauze drainage is essential. In intestinal resection I think that gauze packing about the suture line is one of the best things that can be done, and it makes the mortality much less than the suture with complete closure of the abdomeu. I believe that the circular, end-to-end suture of the intestines, with provision for to add to what has been said on the matter of drainthe escape of feces, is the most important thing in age. I do not use it so much now as I used to before connection with that operation. In tubercular perito- I operated in the Trendelenberg posture. With the pa-

nitis, of course, that is an operation for drainage. Drainage in hemorrhage, I think, is an important matter. I think drainage is unnecessary and should be avoided in every case in which the condition requiring operation is essentially aseptic; and that is true of all hemorrhages, almost all internal hemorrhages. It is true of all hemorrhages, excluding the hemorrhages from malignant disease and hemorrhage from wounds and accidents in which the hollow viscera are also injured. I should not drain in any case of peritoneal hemorrhage unless there was persistent hemorrhage; and yet I regret I did not drain in a case of extrauterine pregnancy I operated on eight or ten weeks ago, in which the abdominal cavity was much distended with blood, and the patient died with general peritonitis. I think she was infected at the time of the operation. She was in articulo mortis at the time, and the preparations had to be made with great baste. I have no doubt that the infection was by some not very virulent germ. She lived four or five days, and died of general peritonitis of no very fulminating kind. I think I ought to have drained. I did not, because in a case just like it (except that the patient was not so badly off) the patient recovered without any trouble.

It does not seem to me that it is necessary to use the Miculicz method. It does not seem to me that much need be said about the way you use gauze. The principle is a wick, capillary attraction, dryness, pres-If you want to use pressure, I think the Miculicz method would be very advantageous. You remove the gauze more easily perhaps in this method. Unless you desire pressure, I think we use too much gauze, and I am coming to the conclusion from a very extensive experience with it. I have had recently a case of acute intestinal obstruction from the using of too much gauze in a case of appendicitis. The small intestines were pushed in such a way by the gauze that obstruction resulted. A wick will drain better if it is a small one than if it is a large mass. I think one error is using too much gauze except for pressure.

I have had very few fistulæ. I recall but one case of fistula following abdominal hysterectomy, in which I did pack with gauze on account of hemorrhage. The fistula lasted until the ligatures came away, and then closed. I know of nothing more annoying and difficult to treat than an abdominal fistula discharging a few drops of pus every day. I think this may be infected with the cocci of the skin probably, and these do not do much harm, but grow rapidly and are not destroyed in this poor tissue; these lifeless granulations keep it going.

In regard to irrigation, that is another thing about which I should say the same that Dr. Homans has said in regard to drainage. I do not like to irrigate, and never do if I can help it in any case that is not septic, and rarely irrigate in those. I should irrigate less I could be sure of irrigating in such a manner that the fluid would not be spread among the intestines. If you put a drainage-tube into a small opening and the fluid does not run out, it will spread all through the abdominal cavity, and carry with it colonies and deposit them everywhere in the abdominal cavity; and you substitute a general for a local peritonitis.

DR. IRISH: I do not know that I have very much

tient in that position it becomes easy to clean out the pelvis thoroughly in many cases in which in the old to take care of it. I nursed one for a year one time, horizontal position it could not be so well done. still follow, however, the rule that whenever any de- tient. It may be interesting to know how it was generated liquid from an ovarian tumor, or pus from a finally cured. She finally made a poultice of some pus-tube, or any suspicious and septic liquid has got into the abdominal cavity, I always feel safer with a drainage-tube than to close it without it. At the same time, I believe that the drainage-tube is a source of danger, not so much from infection as from the posi-tion of the tube. I do not know but I have been especially unfortunate, but I have had two cases of fecal fistula following the use of drainage - one a glass tube and the other with gauze. It is possible in the case of the gauze that it may have remained in too long. I had a good deal of difficulty in getting it out, and it remained some five days. I think; and in the particular case with the glass tube I used a Bantock tube, and the upper end of the tube was flush with the wound, and I did in this case as I always do - carried my fingers down into the pelvis to the bottom of the tube to be sure there was no loop of intestine beneath. But it is very easy with the glass tube, during the subsequent dressing of the patient before the bandage is applied, for a loop of intestine to get under the end of that tube in the handling of the patient. In cases of hysterectomy where the pedicle is brought outside, I always avoid the use of the drainage-tube if possible, because I think in those cases it adds very much to the danger of subsequent hernia; and if I have to use a drainage-tube after a hysterectomy, I am always very careful, always try to bring it well up in the wound and at a distance from the pedicle, so that the abdominal wall for a certain distance shall be closed between the tube and the pedicle at the bottom. Unfortunately, the drainage-tube does not always save us from sepsis, as I have experienced.

Dr. Cushing: I have very little to add except in regard to this principle of having some one in the room to examine suspicious fluid and pass on whether the tube shall be used or not. That is all very pretty, but it does not seem to me good surgery. If the fluid is suspicious enough that you have to have it examined, I should rather take the chances of injury from using the tube than take the chances that in a particular field the young man might examine during the operation, although he found no bacteria in what he examined, there might be bacteria he had not happened to find. It seems to me to be getting things down pretty fine and a little too ideal. I know very well that in pus from pus-tubes it very often is sterile, as the doctor says; and I had rather use a tube every time than take the chances of getting my assistant to look at it and tell me whether the germs were there, and, if there, were capable of proliferating.

In regard to the matter of fecal fistula laid to the drainage-tube, it seems to me the drainage-tube is wronged therein very often, that fecal fistula is not caused by the pressure of the tube, but by separating an adhesion, possibly by rather rough handling of the bowel, so that there is a thin place and the patient is going to have a fistula; and, instead of laying it to the tube, we ought to be thankful she did not die from perforation. Of course, to prevent that, the tube should be pulled up and turned round after twelve hours, so as to avoid pressure.

In regard to abdominal fistula, not fecal, after the use of the tube, I fully appreciate what Dr. Homans

says about the distressing effect of having one - having going to see it every day, in a French-Canadian pamustard, and bound over it a little image of a sacred nature and the ligature came out the next morning, and I had to bow to evidence. Since then I have always used catgut in the abdominal cavity. As to boiled water carrying colonies of micrococci through the abdominal cavity, I don't see where the boiled water, if filtered and clear, is going to get them unless it is spreading round those already in there. Now, I don't think that is a valid objection, because, if there are colonies in there, they are going to proliferate; if they are septic and not removed, they are going to set the woman on fire, and she is going to get her peritonitis just the same. That is how I should look at it. I think that flushing can be washed out so that the whole is as clean as any one part can be; still, there are some disadvantages in irrigation, and the use of the Trendelenberg posture enables us to do things in such a clean way that we do not have to do it as much as we did.

There is so much to drainage — in the minutiæ of it; so much said against it does not rest on perfect comprehension of the small points connected with it that I thought it was fair to bring up some of these points for discussion.

Dr. Lund read a paper on

CANCER OF THE SIGMOID FLEXURE, WITH PERFO-RATION.8

DR. HOMANS: I remember one case that died in the same way, where I made the autopsy.

DR. RICHARDSON: I have seen perforation in the transverse colon, without symptoms, come on suddenly.

Dr. Post: Dr. Councilman has recently shown a case where there was perforation above a fibrous stricture where the stricture was no tighter than this.

Dr. C. L. Scudder described

A CASE OF MOVABLE KIDNEY.

The specimen which I have here is from a female patient twenty-five years old, who has had the following history: For four years a movable kidney has been noticed, and this kidney has increased in size rather slowly, until now, four years after the first observation, it was found to be about the size of the fetal head, situated in the left loin, fitting well up in the hypochondrium. The tumor was causing no serious symptoms at the time of the operation. She was two months pregnant. The operation was done at this time for fear that the abdominal distention, which was increasing rather rapidly, might be too great, and, also, it was thought that the tumor might be malignant. The operation was done through an incision a little to left of the left linea semilunaris. The abdominal cavity was opened, and the colon was found to be in front of the tumor, with the meso-colon; the outer portion of the meso-colon was incised, and the edge of the peritoneum of the meso-colon was stitched to the peritoneum of the wound toward the median line, thus closing the abdominal cavity and keeping the bowel from the field of operation. The tumor was enucleated and found to be connected with the kidney, coming from its lower end. The tumor presented as a cyst, was incised, and

³ See page 211 of the Journal.



the fluid evacuated amounted to eight ounces. fluid was bloody, and some like it was examined by Dr. Wood, as the tumor had been aspirated some days before the operation. The fluid was found to contain biliary pigment and a small quantity of urea and a few fatty degenerated cells. The fluid was evacuated, and the cyst removed with the kidney. There was no drainage used in this case and no vessels were tied except the renal. The abdominal contents, with the dressing applied well into the loin, seemed to make a pretty good pad, and closed the cavity from which the tumor was removed. The nature of the tumor is still a matter of doubt; it has not been examined microscopically. The temperature has been normal. To day, the fourth since the operation, the total quantity of urine has increased up to sixteen ounces; the first twenty-four hours, fourteen ounces; the second, eleven; the third, sixteen. The patient is comfortable and has no symptoms whatever.

This case is being carefully watched, and periodical examinations of the urine are being made. A further report of the case will be made in due time.

THE AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

EIGHTH ANNUAL MEETING, WASHINGTON, D. C., MAY 29, 30, 31 AND JUNE 1, 1894.

(Continued from No. 8, p. 194.)

SECOND DAY. - WEDNESDAY.

AERO-URETHROSCOPY, WITH A NEW INSTRUMENT.

DR. WILLIAM K. OTIS, of New York, read a short paper on this subject, and exhibited an improved instrument. He stated that, while aero-urethroscopy will no doubt often render a diagnosis possible in obscure cases, our methods are still very imperfect. The view obtained of the urethra is hazy and unsatisfactory, and for the purpose of making topical applications the urethral speculum is equally as good.

Dr. Otis also exhibited an instrument which he devised for the purpose of facilitating catheterization of

the male ureters.

DR. BELFIELD showed an instrument which he devised for the purpose of securing a view of the deep urethra. Also a longer one, by which a good view of the bladder may be obtained in the region of the trigone.

DR. F. TILDEN BROWN, of New York, exhibited a perineal tube-holder, intended for cases in which long-continued drainage of the bladder through the perin-

eum is indicated.

Dr. Brown also showed a modification of a Clover crutch for perineal operations. Also an improved needle-holder.

STONE IN THE BLADDER: CHOICE OF OPERATION.

DR. WILLIAM H. HINGSTON, of Montreal, read a paper with this title, in which he gave the following conclusions:

(1) Lithotrize in all cases of adults where the stone is neither too large nor too hard for the lithotrite. By lithotrity, he said that he meant the more perfect method, which was foreshowed by Mercier in France, and brought to its highest perfection in America.

(2) Lithotrize where the urethra is or can be made sufficiently capacious for the crushing instrument.

- (3) Lithotrize in children, however young, where the urethra will permit the passage of a crushing instrument.
- (4) In very young children the cutting operation is preferable. The age at which lithotrity is possible must vary with the calibre of the canal, which in young children greatly varies in its capaciousness and in its capacity. When the urethra in the child is not and cannot be made fit to receive the lithotrite, the cutting operation to be chosen is the lateral method.

(5) In cases of stone in the aged, where an enlarged prostate prevents the stone being seized, we should act as if the stone were of large size and incapable of reduction, and proceed to operate by the

suprapubic method.

Surgical interference in cases of calculus in the female remains the same as heretofore. The method employed years ago by Erichson, Thompson and others has since been followed, and stones of large size are removable generally per vias naturales, after dilatation. In exceptionally large calculi the lithotrite commonly suffices, and rarely indeed is the surgeon obliged to resort to the knife.

DR. CHISMORE said that in cases where we find the bladder stretched cap-like over the enlarged prostate, a small stone may evade every possible instrument which we can introduce through the perineal incision. The speaker said he had never encountered a stone weighing more than one thousand grains. Calculi nowadays did not seem to attain the large size they did in former years. This was probably due to the fact that patients sought relief earlier now than they did formerly.

DR. Post, of Boston, said that during the past year he had a patient under his care who was also affected with hip-disease from childhood. On account of the position of the limbs, it was impossible to get him into the litholapaxy position; nor could he be operated on through the perineum. The bladder was accordingly opened above the pubes.

Dr. Bangs said that in some of these cases it might be necessary to choose one of the cutting operations, so that the bladder and pelvis of the kidneys might be

properly drained.

DR. JUDKINS referred to a case in which one of the stitches in a suprapubic wound was torn out during a fit of coughing, and some time afterwards the stitch was passed per urethram, thickly covered with phosphatic deposits.

DR. BRYSON said he had operated in a number of cases in which the stone rested behind the prostate, which obstructed the outflow of urine and set up a cystitis: in two of those cases he was afterwards compelled to do a cutting operation, the distinct object in view being to remove the obstruction which produced the cystitis and which resulted in the formation of secondary calculi.

DR. HINGSTON said, in closing, that he was not wedded to any particular method of operating. He expressed the opinion that there was no condition of the kidney or bladder in which lithotrity was not as good or better than lithotomy. He did not care what the condition of the urine was; whether it was loaded with pus or not. The source of the trouble was the stone, and it should be removed.

URINE-LEAKAGE AND STRICTURE FORMATION, by Dr. J. P. Bryson, of St. Louis.

In this paper the author made a comparative study of the histology of stricture of the urethra and that of old urinary fistula, and illustrated the same with a number of drawings of microscopical sections. His conclusions were as follows:

(1) The close resemblance in the tissue elements, their arrangement and effects upon the related normal structures, point to an identity of the etiological factor, and give support to the doctrine of urine-leakage.

(2) Observing the prolongation of the urethral epithelium on the fistula wall in an effort to create an adequate artificial channel for urine, and seeing that the epithelium lining the stricture also participates in the battle against urine-leakage, we may take fresh hope of radically curing strictures, even of the pendulous urethra, by such means as tend to restore or rehabilitate the urethral lining.

(3) Merely diverting the stream of urine for a time, without such restoration of the lining mucous membrane, would fall into the category of palliative treatment, along with urethrotomy and the various methods of dilatation.

Dr. R. W. TAYLOR, of New York, said that the title "inflammatory stricture" could only be applied in cases where you had a round-celled infiltration in a still lingering state of congestion and inflammation. The inflammatory stage of the stricture was that during which exudation was present. The pathological appearance of the conditions found in these cases hardly warranted the theory of urine-leakage suggested in the paper, which thus far must be regarded as pure assumption.

Dr. Bryson said he did not contend that the doctrine of urine-leakage was definitely settled. simply presented his paper as a comparative study on the subject.

THE POSSIBILITY OF OVERCOMING PERMANENT STRICT-URE OF THE DEEP URETHRA WITHOUT RESORT TO EXTERNAL URRTHROTOMY.

by Dr. J. BLAKE WHITE, of New York.

The author stated that to determine by the usual methods of examination whether or not a deep strictare requires surgical interference for its relief, cannot by any means be regarded as an easy matter. A distinct and positive diagnosis is rarely possible until every prefatory obstruction in the anterior urethra has been detected and wholly removed. A number of instances have come under his observation in which, having reason to doubt the genuineness of the deep obstruction, he deferred perineal section; and when a sufficient time had elapsed after meatotomy, either alone or associated with internal urethrotomy, he was gratified to find that what had seemed to be an impassable stricture in the deeper portion of the urethra yielded readily to the passage of an instrument of full size. Experience has repeatedly demonstrated that large-sized sounds have been immediately admitted along the entire urethral tract after simple division of the meatus, when previously an attempt to introduce the smallest filiform bougie met with unyielding resistance. This fact proves the possible existence of spasm in that part of the urethra especially prone to such phenomena. If the possible existence of an uncomplicated local spasm along the urethral canal is admitted, we must also recognize the possibility of a continuance of urethral erethism, especially in certain cases, for a considerable period after the immediate kind on record. Some of the text-books, it was true,

causes of reflected irritation have been removed. character of the lesion, always associated with some degree of spasm, is such that it may be overcome by patient dilatation after the remote causes of spasmodic contraction have been removed by appropriate treat-

Dr. White then gave the history of a case in which there was constant spasm of the urethra combined with a deep, non-traumatic stricture, which was relieved by careful dilatation with graduated sounds after the obstructions in the anterior urethra had been re-

Dr. TAYLOR said that spasm of the compressor urethræ muscle was a great bugbear. It was assumed that this muscle was in a continual state of great tonicity. As a matter of fact, this was not so, and in the great majority of cases a soft catheter could be passed into the posterior urethra with little or no trouble. As a result of inflammation in the anterior urethra, the compressor muscle undoubtedly did contract, and this constituted spasmodic stricture. It was possible that some of the spasm in Dr. White's case was due to instrumentation.

Dr. Watson said that while he did not favor the divulsion of strictures in the deep urethra, he did not know where the idea originated that the operation was attended by a high mortality-rate. He thought

one per cent. was the highest mortality-rate reported. Dr. W. K. Otis said that both Sir Henry Thompson and Bulkley abandoned the operation because of the high mortality.

DR. TAYLOR said that Van Buren and F. N. Otis gave it up for the same reason.

Dr. Bryson said he regarded dilatation as a most rational and scientific method in the treatment of stricture, and very few strictures failed to yield to careful and intermittent dilatation. Certainly by mere division of the stricture we accomplished nothing.

Dr. Hingston said that in the treatment of stricture he favored the method adopted by Dr. F. N. Otis, that is, gentle dilatation, with occasional division.

DR. F. TILDEN BROWN said that Dr. White, in his paper, reported an example of a very clear-cut type of cases. He did not see why such conditions of spasm or partly spasm and partly cellular infiltration - should be regarded as the outcome of instrumentation.

DR. W. K. OTIS said there was no doubt that most strictures could be dilated to a certain point. In some cases, however, cutting would give more permanent As regarded spasmodic stricture, he had seen many such cases, which he did not think were due to instrumentation.

Dr. White, in closing the discussion, said he was positive that in the case reported by him the spasmodic stricture could not be attributed to instrumentation.

Dr. ALEXANDER W. STEIN, of New York, read a paper on

EXFOLIATION OF THE MUCOUS AND SUB-MUCOUS COATS OF THE BLADDER, PRECEDED BY RENAL AND VESICAL CALCULUS.

He first referred to the fact that exfoliations of the mucous membrane might occur from the uterus, vagina, larynx and other mucous tracts. That complete exfoliation of the mucous membrane of the bladder might occur had been repeatedly denied, and that quite recently, although there were at least fifty cases of this

mentioned a diphtheritic and croupous cystitis, but with these conditions the cases collated had nothing in common. Not only the entire mucous membrane had exfoliated en masse, but portions of the muscular coat came away as well. In one case the entire mucous coat was shed in form of a sac, and after an interval of some days a portion of the muscular tunic was cast off separately. The real question at issue, therefore, was not whether exfoliation of the bladder occurred, but how it occurred. Reasoning from analogy, we inferred that when a mucous membrane was subjected to prolonged or intense irritation, as after the employment of powerful urethral injections, or the presence of ammoniacal urine in the bladder, the vitality of the epithelium became modified, and its exfoliation was favored. The chief etiological factor in almost all the cases appeared to be retention of urine. Of the fifty cases that had been reported, forty-five were females and five males. In all of the former, the retention was due to a retroverted gravid uterus, or else the pressure of the child's head in prolonged labor. The cast-off shreds usually had a gritty feel, and were covered with a phosphatic deposit. The prognosis in women was good. The exfoliated membrane was often expelled per urethram, en masse, and so ended her trouble. Of the forty-five cases in women, nine died, and in these the fatal termination was not altogether attributable to the vesical lesion. In men, the reverse was the case. Two of the five patients died. The prognosis in men was not so good because the conditions which gave rise to the exfoliation were in themselves grave, independent of the bladder trouble. Complete recovery occurred in some of the most unpromising cases, but if so, there was apt to remain for a time disturbance of co-ordination between the retentive and the expulsive forces of the bladder.

Dr. Stein then gave the history of a case of this kind coming under his observation, and exhibited some of the sbreds passed by the patient.

THIRD DAY. - THURSDAY.

A PLEA FOR THE EXCISION OF THE INITIAL LESION, by Dr. Edward E. King, of Toronto, Canada, (read

by the secretary).

The author stated that while the specific microbe of syphilis had not yet been isolated, it was almost beyond doubt that the disease was caused by a specific germ. In all germ diseases there was a period of incubation of variable length. In a good many the effect of the germ was self-limited, whilst in others it was continuous. That mild cases of these diseases occurred proved either that a smaller dose of the germ was administered, or that the soil was not properly suitable for its growth, or that both of these conditions existed together. all cases we had a period of incubation, of exacerbation and a period of recrudescence. The intensity of secondary syphilis had been held to be in direct proportion to the extent of the initial lesion; this the author said he had corroborated, and he had further demonstrated clearly to himself that it was also in direct proportion to the time that the initial lesion had existed.

Dr. King said he did not think it was possible by any known means to abort syphilis, once the germ, in sufficient quantity, had entered the general system, but that the course of the disease could be greatly modified by limiting the amount of the poison which entered the economy. Excision had been useful in dence, as we usually saw it after the syphilitic proother diseases where fatal results followed the intro- cesses had ceased.

duction of a poison, when neglected; for instance, the effects of rabies and the bite of a cobra had been prevented by free and early excision. So, with syphilis, if it was possible to see the lesion during the first few hours of its existence and to at once excise it, the disease might be aborted. Even with the ameliorating results, the patient should not be allowed to be careless about internal treatment.

Among the cases reported by Dr. King, in which he performed early excision of the initial lesion, is the following: The patient was a male, who noticed a slight crack on the free border of the prepuce. Fifteen days previously he had bad intercourse with a woman of the town, who "had a skin disease on her body." This woman, on examination, was found to be suffering from a secondary skin eruption and mucous patches on the vulva. The lesion on the man's penis was immediately excised under antiseptic precautions, and the edges of the wound brought together with fine silk. Since that time (June, 1893) he has presented no further symptoms of syphilis. In six other cases reported by the author the history and results were much the same.

DR. EDWARD MARTIN, of Philadelphia, read a paper on

EPITHELIOMA OF THE PENIS.

After detailing the histories of a number of cases of this affection coming under his observation, the author stated that one of the most interesting points in connection with the subject was the etiology of the disease. Phimosis was almost universally acknowledged to be a strong predisposing factor, and in six of the seven cases which he saw, this condition was present. Traumatism was usually recognized as a predisposing factor. Direct contagion was generally denied, although thirteen such cases were on record, eight of them being instances of contagion from the wife to the husband. Syphilis has been repeatedly quoted as a predisposing factor in the development of cancer. This ground was scarcely tenable, and was certainly not generally accepted, though Demarquay had collected ten cases who had suffered from syphilis. Two such cases had come under the author's observation.

The prognosis of epithelioma of the penis was guardedly favorable. Accurate knowledge of the percentage of recurrences after thorough extirpation could scarcely be obtained, since there was a natural tendency to report only those cases which were successful, or which presented certain peculiarities.

In performing the operation we could arrive at a very clear idea as to the chance of radical cure in individual cases by careful microscopical examination of the parts removed. When the penis was amputated, cross-sections should be taken at the seat of the amputation, and these should be carefully examined for cancerous infiltration. Similar examinations should be made upon the entire periphery of the growth. Even though these sections showed healthy tissue, this, of course, did not guard against glandular recurrence. In all cases where amputation of the penis was required, the groin should be opened freely and the entire chain of lymphatic glands removed, whether they were enlarged or not.

DR. TAYLOR said that epithelioms of the penis occurring in syphilitic subjects was probably a coinciDR. LRWIS said that in cases where amputation of the penis was performed, removal of the testes had also been advocated, on the theory that if they were left, the rubbing of the clothing against the stump of the penis produced a certain amount of erethism and increased the supply of blood to the parts, thus favoring recurrence.

The discussion was continued by Drs. Bangs, J. Blake, White and Chismore, and was then closed

by Dr. Martin.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

MEETING, June 6, 1894.

Dr. CHARLES W. DULLES read a paper entitled

NOTE ON FRACTURES OF THE HUMBRUS AT THE ELBOW-JOINT.1

DR. ADDINELL HEWSON: I think that the points advanced by Dr. Dulles are well taken both from an anatomical and surgical standpoint. The fixation of the joint depends upon two factors - first, the coutour of the bones and, second, although not of so great importance, the deltoid shape of the lateral ligaments. In the fixation of this joint Dr. Dulles brings the head of the radius in accurate approximation with the capitellum. The remaining portion of the head, together with the orbicular ligament, occupies the space immedistely above the capitellum, and prevents the angle being made less than forty degrees. This angle is made greater by the position in which he places the hand, midway between supination and pronation. I think that the points that Dr. Dulles has made have been brought out in the adaptation of the Stromeyer splint to the treatment of fractures at this joint. If we recall the method of formation of the lower end of the humerus it will be remembered that the epiphysis is divided into four parts — the external condyles and internal epicondyle, the point of ossification for the trochlear surface and for the capitellum. These points of ossification vary in the time of their attachment from the third to the eighteenth year. This will make a great difference in the treatment of fractures.

I have had several cases of fracture at the elbowjoint in which I have obtained good results, although
not using the treatment employed by Dr. Dulles. One
case was that of a young man, aged eighteen years,
with a T-fracture at the elbow-joint. In that instance
there was obtained complete use of the joint and preservation of the carrying function. In this case an
anterior angular splint was used, and I attribute the
result to the care that was employed. The anterior splint in this case was furnished with a Stromeyer
screw. In this way one splint is sufficient. The only
modification that might be made would be, if the splint
is to be worn in the extended position, to bring out
the natural angle. The lines of the humerus and ulna
are at an angle in the straight position, but in the flexed
position the line of the humerus and the inner line of
the ulna are in the same vertical plane.

DR. RICHARD H. HARTE: I have been much interested in Dr. Dulles's remarks. Looking at the anatomical relations of the joint, there is one point that is often overlooked. If we examine the lower end of the humerus we shall find that the larger portion of the articular surface is anterior to the long axis of the bone, and that the natural functions of the hand and forearm

¹ See page 268 of the Journal.

are performed largely with the forearm at or near a right angle with the arm. Of course there are reasons why in certain conditions of fractures at the elbow, the fragments may be in better position in the extended position, but, as a rule, the flexed position is the most satisfactory. In the flexed position the ligaments are relaxed almost equally, and the flexor and extensor muscles are also relaxed. With the arm in a right-angled position there is very little tendency to displacement.

Of course, as Dr. Hewson has suggested, the epiphyseal element comes in in young subjects. I think that in such case subsequent trouble is oftener due to epiphyseal separation and the changes that follow than to any special displacement of the fragments. I think that we are less liable to have interference with function in adults than in young persons.

With regard to the extended position, in the past year I have known of two cases where the arm had been treated in this position, and where the arm had been left fixed in this position, requiring subsequent resection. I think that with the auterior or internal angular splint we get as good results as with any other mode of apparatus.

Recent Literature.

Clinique des Maladies du Système Nerveux. Par M. le Professeur Chargot. Leçons du professeur, mémoires, notes et observations parus pendant les années 1889-90 et 1890-91, et publiés sous la direction de Grorges Guinon, chef de clinique. Tome II, 8vo, pp. 482, with one plate and twenty-one illustrations. Paris: Aux bureaux du Progrès Médical. 1893.

The present work, which has appeared some months after the death of the great teacher whose name it bears, has naturally a melancholy interest. Only a small portion of the work, however, is actually the product of the distinguished professor. A lecture on Jacksonian epilepsy, another on vigilambulism, with hysterical double consciousness, and three lectures on various symptoms of hysteria are all that bear his name. The rest of the work is made up of various contributions by his assistants, chiefly among them his former chief of clinic, M. Guinon. Most of the articles have already appeared in the different French journals, so that an elaborate analysis is hardly necessary. The subjects discussed, beside those already mentioned, are hysteria, hypnotism, somnambulism, tabes and diabetes, and progressive myopathy. The collection, in one volume of these various articles, whose importance has already been recognized, will be welcomed by all who are interested in nervous affections. It is to be hoped that among Charcot's papers may be found material for yet another volume.

Exercise for Pulmonary Invalids. By CHARLES DEN-ISON, A.M., M.D. Denver: Chain & Hardy. 1893. Denison, in this little book, which is a reprint of an article read before the Congress of Medico-Climatology of the World's Fair Congress Auxiliary, urges the

of the World's Fair Congress Auxiliary, urges the necessity of properly selected exercise for all patients with past, existing or approaching respiratory disease. He calls attention to a method of treatment unfortunately often overlooked by the general practitioner, and describes certain forms of light exercise which, as he says, are "good at-home substitutes for more elaborate systems or for out-of-door activities."

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288 WASHINGTON STREET, BOSTON, MASS.

THE PLAGUE IN CHINA.

In the early part of this year the plague appeared in Canton; and in the month of May it spread to Hong-Kong, where it raged for two or three months, and has not yet entirely disappeared. An official report places the number of deaths from the plague in the latter city up to the first of August at 2,504. In June, Dr. Kitasato was sent by the Japanese Government to study the disease, and a month later sent his first report to the Minister of the Interior. It is recorded that in the fourteenth century the plague raged both in Europe and Asia. Since then it has prevailed in various parts to a limited extent, in gradually decreasing virulence; but during all this time it was endemic in China, and made its appearance on a limited scale year after year in the southern part of the country. In the present epidemic at Hong-Kong seventy-five to eighty per cent. of those infected The principal symptoms are as follows: After an incubation period varying from three to five days, and in some cases even to eight days, high fever appears, with swelling of the lymphatic glands, generally first in the femoral lymphatics, and subsequently spreading to those of the groin, armpits and neck. The tongue becomes covered with a whitish-gray or blackish fur, and the patient suffers, also, from severe headache, accompanied by delirium, and, in severe cases, vomiting and diarrhea. The third and fourth days are the most fatal. In cases which recover, the temperature drops gradually after about a week. The glands suppurate often persistently. The disease affects young and old of both sexes. With few exceptions the patients were Chinese, especially those living in the more filthy quarters.

Dr. Kitasato's report consists almost entirely of the description of a bacillus which he has isolated and has good reason to believe is the specific cause of this disease. This bacillus is found in the blood, the lymph and the internal organs of those afflicted with the of Health was so small a part of those which actually

plague - a fact which puts this disease in the category with splenic fever and relapsing fever. In no other disease has this kind of bacillus ever been discovered. When the bacillus is inoculated in other animals, appearances similar to those presented by human bodies are found after death. The bacillus is rod-like in shape, and its two ends are somewhat blunted. It can be stained with the ordinary aniline dyes, the two ends being more easily stained than the middle part. It is very slow in motion and is most prolific in its growth in blood serum at the normal temperature of the body, and develops most luxuriantly after twenty-four to forty-eight hours. The appearance of the cultures and their resistance to antiseptics is described.

Mice, rats, guinea-pigs and rabbits are susceptible to inoculation with cultivated virus, blood and fragments of the internal organs, contents of the lymphatic glands or the contents of the intestines of a plague patient; and according to their size contract the disease in one or two days. Pigeons are not affected. Blood from living patients always contains the bacillus, although in very varying numbers; and this bacillus is the same as that found after death in the spleen and other organs, except that the latter are somewhat longer and stain a little differently.

As precautions, the report urges ordinary sanitary rules, isolation and disinfection, and the hunting and destroying of the bodies of rats and mice which have dropped dead in any part of the house. Convalescent patients must be isolated for at least a month after recovery, since the bacillus may be detected for three weeks or more in blood and lymph.

SMALL-POX IN THE SWEAT-SHOPS OF CHICAGO.

In answer to a request from the Governor of Illinois the State factory inspectors have issued a report on small-pox in the tenement-house sweat-shops of There are in that city about one thousand licensed shops, and about twenty-five thousand other rooms in which garments are manufactured. It was, of course, impossible that a proper investigation of all of these places could be made. When the presence of small-pox in the tenement-house shops became apparent, the office of the factory inspectors was already equipped with the latest lists of the wholesale houses, the contractors employed by them, and the addresses of the employés; but these lists had become extremely incomplete owing to the neglect of contractors to furnish the authorities with the names of the home finishers. The State Board of Health testified that no contractor or home finisher had ever voluntarily complied either with the State law or with the city ordinances requiring registration; that the lists had to be obtained entirely by sending out inspectors.

A random investigation of the thousands of rooms in which clothing was manufactured was not possible. The cases of small-pox reported to the State Board occurred that other sources of information had to be sought for. Families in which the disease occurred had several reasons for concealment, the chief being the fear of the pest-house and financial loss. Parents sometimes hid their children in sacks, or locked them in closets, or smuggled them through the street-cars to other localities. The neighbors helped in the concealment, for fear of quarantine and loss of trade. After the middle of June, the State Board of Health declined to give information, and is generally censured by the report as inefficient and even culpable.

The report gives lists of cases occurring in the streets in which these clothing establishments abound, and traces the spread in several cases to these sources. The dangers, especially in case of an epidemic, from this system of tenement-house workshops arises from the fact that men, women and children are gathered together from other tenements where the disease may be, and thrown into direct contact with tenants living in the most unwholesome conditions. When the shops themselves are in an infected house the employés cannot know of this fact in time to avoid danger. The clothing also sent out from such places is a constant source of danger to the public. The report proves its case well that the system of sweat-shops, dangerous at all times, was in this outbreak of small-pox in Chicago a serious hindrance in finding and preventing the spread of the disease.

IMMORAL MASSAGE.

In the JOURNAL of last week, on page 202, we quote an interesting extract from the Diary of Capt. Cook, dated September, 1777, from the Society Islands, in which he describes his personal experiences while being massaged; a luxury which was then not known in Europe and practised apparently only by these islanders, sometimes by the men but more generally by the women. This account leaves us in doubt as to what the standing of these practitioners of the art would be in one of our modern cities, and hints at a fresh proof of the often repeated proverb that "there is nothing new under the sun."

Now, more than a century later, the British Medical Journal says that in London the legitimate massage market is overstocked, and that no woman, unless she has a private connection, has the slightest chance of getting a living by massage alone. It describes a comparatively new departure in the business of administering to the sexual entertainment of the public. It appears that many young women, believing that there is a promising prospect in the profession of massage, spend their time and savings in instruction in the art; and discover when too late that the field is overcrowded. They answer the advertisement of some establishment only to find that they are expected to do work which may be anything from indelicate to "accommodation." Although the British Medical Journal knows some stories that are almost incredible, it does not relate

Young men about town often make a tour of these places, which are evidently serious rivals of older methods, especially as they advertise in the daily papers. But this is not all; it has become a fashionable fad for certain ladies of position to frequent the rooms of a young and good-looking masseur.

The matter is certainly a serious one. The London police have already taken it in hand; and the Home Secretary has ordered an investigation of so-called "massage rooms." London is unfortunately not the only city in which similar scandals need suppression. In our large cities the daily papers often contain advertisements which more than suggest similar nastiness. Although the profligacy of this country does not hold the same high social position that it does in England, especially among our women, there are, nevertheless, unsavory places which need overhauling. The Medical News notes that these revelations have already been followed by the arrest of a number of persons in Philadelphia by the police, for similar practices. The medical profession owes it to the community that abuses shall be called by their proper names, and shall not be allowed to masquerade under the protection of a medical title.

MEDICAL NOTES.

THE CHOLERA. — The disease keeps steadily increasing in the provinces outside St. Petersburgh; and in consequence the Russian army manœuvres have been prevented. It seems to be gaining also in Prussian Silesia. Two hundred cases daily are reported from Galicia with a mortality exceeding fifty per cent. Sixty cases have appeared during the past week in Nijni-Novgorod, where the great annual fair is soon to open.

THE CONTAGIOUSNESS OF CONSUMPTION. — The Toronto courts have recently had the question of the contagiousness of consumption before them. A health officer demanded the dismissal from school of a child suffering from phthisis, and his action led to legal proceedings. The judge sustained the action of the health officer, deciding that the disease is contagious.

SMALL-POX AND VACCINATION. — The last quarter's statistics of Birmingham, England, report that the number of cases of small-pox notified was 651, and the registered deaths from the same disease 54, the cases and deaths arranging themselves in respect of vaccination as follows: Vaccinated cases, 560; deaths, 26; mortality, per cent., 4.6. Unvaccinated cases, 63; deaths, 18; mortality, per cent., 28.6. Doubtful cases, 28; deaths, 5; mortality, per cent., 17.9. The data for this city is not pleasant reading for the anti-vaccinator.

They answer the advertisement of some establishment only to find that they are expected to do work which may be anything from indelicate to "accommodation." Although the British Medical Journal knows some stories that are almost incredible, it does not relate them, but leaves the particulars to our imagination.

SMALL-POX IN MILWAUKEE. — Under date of August 18th, Dr. U. O. B. Wingate, Secretary of the Wisconsin State Board of Health, thus summarizes the small-pox situation in Milwaukee: "At present the city is orderly, and everything is being done that them, but leaves the particulars to our imagination.

present about 55 cases in the city. There have been 31 deaths out of 121 cases reported up to this date. A large corps of physicians are vaccinating from house to house; extra barracks are being erected, in order to relieve the hospital, which is now full. Two sets of inspectors are on at the depot, one for day and one for night service; also at the steamboat wharves, doing everything possible to prevent suspects, or those coming from infected districts, from leaving the city. The railroad authorities and boards of health in the adjoining towns are cooperating to prevent all such persons from boarding the trains at those points."

Anti-Cholera Inoculations. — There were 826 persons inoculated in Calcutta for protection against cholers during the month ending June 24, 1894. Cholera occurred in three houses in which inoculations had been made upon some of the inmates, but all the cases were among the uninoculated, none of the inoculated being attacked.

AN INTERNATIONAL MEDICAL PRESS COMMITTEE has been formed for the purpose of providing greater facilities for the report of the next International Congress.

MISSISSIPPI VALLEY MEDICAL ASSOCIATION. The twentieth annual meeting of the Mississippi Valley Medical Association will occur in Hot Springs, Ark., November 20, 21, 22 and 23, 1894.

A MEMOIR OF SIR ANDREW CLARK. - The life of this famous physician is soon to be published. The fact that Mr. Gladstone will supply the sections on private life and character should make it a doubly interesting work.

PROFESSOR BILROTH'S WIDOW. — The Emperor of Austria has granted to the widow of the late Professor Bilroth a yearly pension of 2,000 florins. This is to be interpreted as a mark of special favor, because, according to the law of Austria, the pension allowed to widows of professors is only of 600 florins. As the distinguished surgeon is understood to have left little or no private fortune, the Emperor's grateful act has given general satisfaction.

LOWERED DUTIES ON DRUGS. — The Senate tariff bill lowers the duty on a number of drugs, that on castor oil being reduced 56 per cent. below the rate under the McKinley law, and that on Epsom salts 34 per cent. Other reductions are, 30 per cent. on cod-liver oil, 50 per cent. on bicarbonate of soda, 20 per cent. on sublimed sulphur, 18 per cent. on refined camphor, and 25 per cent. on strychnine. The duty on spectacle lenses is reduced from 60 to 35 per cent. ad valorem, a decrease of nearly 42 per cent.

HYDROCELE IN THE FEMALE. — In the Centralblatt für Gynäkologie this term is defined as fluid in an imperfectly obliterated canal of Nuck, and is usually detected in pregnancy and childbed. According to Wechselmann, it has been found twenty-two times on the right side, seventeen on the left, and in two cases

thirty-nine, a hydrocele that formed an enormous pyriform, elastic, transparent and fluctuating swelling, as big as a man's fist, in the left groin. It was irreducible, and there was no impulse on coughing; it reached as far as the labium. On incision, a piut of serum escaped; the parts were explored, and the hydrocele was found ending as a blind pouch at the internal abdominal ring.

PRIZE FOR ESSAY ON DIAGNOSIS OF TUBERCULO-SIS BY BLOOD EXAMINATION. - The Colorado State Medical Society has offered a prize of one hundred dollars for the best essay on the diagnosis of tuberculosis by examination of the blood. Preference is to be given to the detection of the pre-tubercular stage. The prize is open to any essay written in the Euglish language, condensed to read in thirty minutes' time; and the award is to be reserved for an essay deemed sufficiently meritorious, that is, one giving rules for the diagnosis to be made from the blood alone, without the patient being seen. The Prize Committee consists of Dr. Charles Denison, H. A. Leman, both of Denver, and Dr. S. E. Solly, of Colorado Springs.

GROWTH OF THE RAILWAY SURGEONS. - The following statistics in regard to the number of railway surgeons and their association are of interest: There are at present 147,704 miles of railways in the United States and Canada, and all but 17,088 miles are watched over, more or less, by surgeous in the employ of the corporations. The total number of railway surgeons is 5,466. The railways which possess a hospital system cover 36,751 miles; railways with a relief service, 13,446 miles; and railways with a surgical service and chief surgeon, 44,281 miles. There is a National Association of Railway Surgeous with a membership of 1,767 and an organ called *The* Railway Surgeon. According to this journal there are over 120 chief surgeons, representing 82,032 miles of railway, employing 3,384 surgeons, "all of which are working harmoniously under a chief surgeon, who in each instance has, to a greater or less extent, charge of the surgical department of the company he represents. We have great reason to rejoice and be glad and to congratulate this association on the work it has accomplished."

GIFT OF DR. WILSON FOX'S PLATES OF DIS-EASES OF THE LUNGS TO MEDICAL SCHOOLS. — In a letter to The Medical Press and Circular, Drs. Sidney Coupland and W. R. Gowers direct the attention of the managers of medical schools in England, the Colonies and America to the fact that there is a considerable number of the surplus sets of the colored plates of Dr. Wilson Fox's "Atlas of Diseases of the Lungs." These contain the most perfect representation of morbid states of the lungs ever produced. They will be of great value to medical schools, if framed and placed in the museum or post-mortem room. It is, therefore, proposed to give a set to each medical school the dean or manager of which desires it; a certain number will be reserved until October to give colonial medical on both sides. Lammert observed in a nullipara, aged schools an opportunity of obtaining them. Each set

contains twenty-five colored plates. Brief descriptions can easily be prepared from the text of Dr. Fox's atlas and affixed to the plates. The cost of packing and transmission amounts to one shilling in the United Kingdom, two shillings, sixpence for America and the Colonies. This sum should be sent, with the application, to Messrs. Mintern Bros., 84 Southampton Row, London, W. C.

EXPERIMENTING WITH THE VENOM OF RATTLESNAKES.—Professor Beyer, of Tulane University, New
Orleans, has recently allowed himself to be bitten by a
rattlesnake, in order to determine if a person can be
inoculated with poison and rendered proof against the
venom of serpents. He intends to repeat the experiment.

WOMEN MEDICAL STUDENTS IN GLASGOW.—At the graduation exercises of the University of Glasgow, held on July 26th, the degrees of Bachelor of Medicine and Master in Surgery were conferred on Marian Gilchrist and Alice Cumming. Professor Charteris delivered the address to the graduates, and in congratulating the female recipients of degrees, he expressed a hope that the time would come when degrees would be bestowed which would do less violence to the sex, and that they would run as "spinster in medicine" and "mistress in surgery." The abbreviation of M.S., however, would not distinguish the sex. This is the first time in the history of any of the Scottish universities that a medical degree has been granted to a woman.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the week ending at noon, August 29, 1894, there were reported to the Board of Health of Boston, the following numbers of cases of acute infectious disease: diphtheria 47, scarlet fever 30, typhoid fever 31.

Boston Board of Health in New Quarters.—
Hereafter the Board of Health will transact all its business from its new office in the Old Court House; its old rooms will be given up to the law department. The Board will occupy two large rooms at the southern end of the Court House. One of the rooms will be used by the clerks, while the other has been divided by a partition, and will be used on one side for the Health Commissioners and on the other for hearings.

BEQUESTS TO HOSPITALS. — The will of Mary W. Hyde, of Boston, gives to the Free Hospital for Women \$2,000; the Children's Mission to the Children of the Destitute, and Home for Little Wanderers, \$500 each.

HOSPITAL FOR CONTAGIOUS DISEASES AT LYNN.

— Plans for a new hospital for contagious diseases, to be erected on Holyoke Street, Lynn, have been accepted by the committee on public property. Contracts will be made at once, and the work pushed so as to have the building completed in November.

NEW HOSPITAL BUILDINGS FOR BROOKLINE.— The two new hospital buildings authorized by the town of Brookline for use in cases of contagious disease are

now almost completed. They are located on town land off Newton Street at a safe distance from the poor farm and the small-pox hospital. They are built of wood, are one story in height, with a hip roof, and will cost when completed \$4,000.

A GARBAGE CREMATORY FOR NEWTON. — The cremation of Newton's garbage is being considered by the board of health, and they expect to make a definite move in a few weeks toward the establishment of a plant. The present contracts remain in force until March, 1896. The board hope to get the indorsement of the city government for such an establishment this fall, and next year will make a move for the issue of twenty-year bonds for its construction.

NEW YORK.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE. - At the sessions of the American Association for the Advancement of Science, which recently held its annual meeting in Brooklyn, and which was presided over by Dr. Daniel G. Brinton, formerly of Philadelphia, but now a resident of Media, Pa., a number of papers of interest to the medical profession were read. Dr. Franz Boas delivered an address before the Section on Anthropology on "Human Faculty as Determined by Race." In the course of it he spoke of the improvement caused in man by civilization, but expressed the opinion that it was doubtful if any progressive changes, or such as are transmitted by heredity, have taken place. In the same section Prof. W. J. McGee spoke of the operation of trephining among the ancient Peruvians, and illustrated his remarks by a collection of skulls on which it had been practised.

Antitoxine Treatment of Diphtheria. — At the last monthly meeting of the New York State Board of Health which was held at the Murray Hill Hotel on August 23d, Dr. Cyrus Edson, of the New York City Health Department, made some remarks in which he spoke in the most enthusiastic terms of the efficacy of antitoxine for the cure of diphtheria, Koch's latest contribution to medical science. He announced that Dr. Hermann M. Biggs, Chief of the Bacteriological and Pathological Bureau of the Department, had just returned from Germany, where he had made an elaborate study of the new lymph and its practical application in diphtheria, and stated that Dr. Biggs had become convinced that it was an almost infallible remedy for the disease if the inoculations were made within thirty-six hours after infection. In Berlin he ascertained that there were between three thousand and four thousand well-attested cases in which the antitoxine had proved successful, and he found that Virchow and other high authorities who had investigated the matter had confirmed Koch's conclusions as to its very great utility. Dr. Edsou further stated that the result of Dr. Biggs's personal investigations were to the same effect, and that he himself was so thoroughly convinced of the soundness of the latter's opinion that he intended to ask from the Board of Estimate and Apportionment a special appropriation

of \$30,000 for the establishment of an experimental station for the manufacture and dissemmination of the antitoxine, as soon as all the necessary arrangements could be made. He felt sure, he said, that if this new agent could be placed in the hands of the Health Department it would result next year in the saving of at least fifteen hundred lives in the city. On the same day Dr. Biggs met, by invitation, a number of physicians at the Bureau of Bacteriology in Bleecker Street, and gave them the results of nine months' experience with antitoxine in Berlin, at the same time illustrating the subject with bacteriological and microscopical demonstrations.

Miscellanp.

A NEW METHOD OF MAKING PALATABLE AND DIGESTIBLE MILK.

DR. ROBERT T. EDES, of Boston, gives a valuable way of preparing milk where other methods have not proved useful:1

A pint of milk is gently warmed. Into it is dropped, very slowly and with constant stirring, about twenty minims of the dilute hydrochloric acid of the United States Pharmacopæia. The milk should be stirred until it cools. In this way a very fine flocculent coagulum is produced, floating in the whey, which is easily accessible to the digestive secretions, while the whole fluid has lost somewhat of the flat and cloying taste which makes it unacceptable to so many. It will be noticed that milk prepared in this way differs from the various "wheys" in the highly important particular that the casein is retained and used, instead of being separated out as a distinct product, while it avoids the bitterness of pancreatized milk.

THE CAUSE OF DEATH FROM CHLORO-FORM.

HEART weakness is so generally assumed to be the first warning of danger in chloroform narcosis that during the anesthesia the pulse is more closely watched than the breathing. That chloroform has no direct action on the heart, however, and that it kills by inducing respiratory paralysis, is the conclusion of Surgeon-Lieutenant-Colonel Lawrie, as reported in the British Medical Journal for July 7th. At a recent meeting of the Royal Medical and Chirurgical Society he contended that the experiments, including those performed under the auspices of the Hyderabad Commission, proved that death from chloroform was due to respiratory failure, and that the practical point to remember during its administration was that the condition of the pulse was quite subsidiary, but that the state of the respiration should be closely watched. Chloroform being an irritant, protoplasm is irritated and destroyed by either its liquid or its vapor. When it is injected into the substance of a muscle, such as the heart or the biceps, motion is arrested in the same manner as it is by hydrochloric acid or any other irritant. He argued that in poisoning from the inhalation of chloroform this irritant action could no more take

New York Medical Record, August 18th.
New York Medical Journal, August 11, 1894.

place in the heart than in the biceps, and hence might be ignored in considering the clinical question of accidental death under this anesthetic. In his experiments with animals, chloroformed blood sent to the heart alone produced no effect whatever, but when it was sent to the brain alone the narcotic acting on the brain centres produced its usual effects. From tracings of the pulse and of the breathing, he demonstrated that chloroform anesthesia without respiratory complication was free from risk.

From much experience with chloroform. Mr. Horsley also was convinced that it was the arrest of respiration which resulted in death, and that in the majority of cases of danger inversion of the patient and artificial respiration would cause recovery. Mr. Gaskell and Mr. Shore agreed that respiration failed first, but held that chloroform had a direct action on the heart also. Dr. Lauder Brunton's experience was that chloroform always paralyzed the respiratory centre before enough had been taken to paralyze the heart. A number of the accidental deaths were due, not to the chloroform, but to the operation itself, to asphyxia, or to noxious substances circulating in the blood. Mr. Lawrie concluded by stating that he had found it impossible to teach careless men to administer chloroform safely, and that heart failure might be indirectly produced by stimulation of the vagus through irregular breathing. He had noticed no difference in the effects of chloroform on different races or nationalities. In seven hundred cases of chloroform narcosis the pulse had been carefully watched, but it had given no reliable indications of danger.

TREATMENT OF TUBERCULOUS PERITONITIS.

GUIGNABERT 1 describes a method he employs in the treatment of tuberculous ascites which was first suggested by Rendu. It is most applicable to this particular form of peritonitis. It consists in introducing a fine trocar and canula through the abdominal wall, midway between the umbilicus and anterior superior iliac spine. While the flow is diminishing, a hypodermic syringe is five times charged with camphorated naphthol, and the contents are passed into the abdomen, the canula being made use of for the purpose. The puncture is subsequently closed by means of aseptic wool and gauze. Hereafter the peristaltic action of the intestine serves to distribute the naphthol, which produces insignificant pain for only a few hours. Furthermore, during the first few days the temperature shows an evening rise, and the ascites apparently increases, though the fluid subsequently disappears. Ultimately masses of adhesion will be felt, and these gradually diminish. During the operation the strictest antisepsis is required.

INFANT MORTALITY IN LONDON.2

ONE of the most unsatisfactory features of English mortality statistics, taken as evidence of sanitary condition, is the comparatively slow rate of decrease of infant mortality. The death-rate at all ages in England and Wales in the ten years 1881-90 was 15 per cent. below the rate in the ten years 1861-70, - that is, before the passing of the Public Health Acts of

Journal de Médecine de Paris, p. 155, 1894.
 Lancet, July 28, 1894.

1872 and 1875. The decrease in the death-rate of infants under one year of age in the same period did not, however, exceed 8 per cent., although it is in the first year of life that the excess of mortality due to distinctly preventable causes is largest. If we look at the London figures we find that while the mean rate of mortality at all ages declined 16 per cent. in the twenty years above referred to, the decline in the rate of mortality among infants did not exceed 6 per cent. It is also disappointing to find that in the first three years of the current decennium, 1891-93, the mean rate of infant mortality considerably exceeded the mean rate in the ten years 1881-90, both in England and Wales and in London. This result was in great measure due to the fact that in recent summers, but especially in 1893, the mean temperature was considerably above the average. The proportion of deaths under one year of age in London to registered births was last year equal to 164 per 1,000, and exceeded the rate in any year since 1874, when it was the same. The rate of infant mortality last year ranged in the five groups of registration districts from 158 per 1,000 in the north, to 175 in the east, and 181 in the central group of districts. In the 41 metropolitan sanitary areas, however, the range of rates of infant mortality was far wider; the rate did not exceed 102 per 1,000 in Hampstead and 128 in Lewisham, while it ranged upwards to 202 in Clerkenwell, 205 in Limehouse, 206 in St. George Southwark, 209 in St. George-iu-the-East, 214 in Holborn, and 219 in Strand sanitary area. Although infant mortality may be more directly governed by maternal care and attention than by what is generally understood as sanitary condition, it is well to bear in mind that as a general rule infant mortality - that is, the rate of mortality under one year of age -bears a constant relation to the death-rate at all ages, which few now venture to disregard as evidence of sanitary condition.

DJAMBOE.

THE native population of Java use as a household remedy in choleraic diarrhea a decoction made from two muskat nuts, a handful of roasted rice and six or seven djamboe leaves, boiled for about ten minutes. There is rarely a generally used household remedy among simple people without some real virtue; and during the last two years, at the polyclinic in Wurzburg, a long trial has been made of the great therapeutic value of the djamboe leaves in diseases of the intestine, and Dr. Hergel has just published a report of the work.¹

The leaves used were sent from Java, and were from the *Psidium pyriforum*, a small tree of the myrtle family. The tree is a native of the West Indies as well as the East, and its fruit is known to most persons in the form of guava jelly. The same acidulous fruit in the East is called *djambos-bidji*. The bark is also used as a medicine, being somewhat more active than the leaves.

Before giving the drug to any patients a trial was first made upon healthy persons. No toxic effects were observed in any case, either on the nervous or circulatory systems or on the secretion of urine. Small doses of half a gramme were effective, but larger ones of thirty grammes caused no obstinate constipation.

¹ Mün. Med. Woch., 29, 1894.

As a therapeutic remedy it was first used in the diarrhea of children. An examination of the secretions and excretions was made before and after the exhibition of the drug, to discover the exact mode of action, but no results were obtained beyond the empiric effectiveness of the medicine.

In over one hundred cases of acute gastro-enteritis in children, it was shown that the most marked diarrhea and vomiting were checked after the third or fourth teaspoonful of a 5-80 infusion. The stools became firmer, fewer and less foul-smelling; and the appetite and strength rapidly returned.

The infusion was tried in five cases of severe acute gastro-enteritis in adults, accompanied by vomiting, ten to fifteen stools within a few hours, low temperature and muscular cramps. A small dose of calomel was given first, followed by the djamboe. The stormy vomiting and diarrhea quickly ceased, and after a few days of prostration the patients recovered.

In a few cases of the acute disease in children, the vomiting and diarrhea ceased but the prostration continued and the children died of exhaustion. At the autopsy no evidences of intestinal inflammation were found.

In about twenty-five cases of diarrhea in phthisical patients, the use of djamboe checked the diarrhea after the use of various astringents and opium had been ineffectual. The following forms were used:

This form was especially used for children.

A fluid extract in doses of twenty drops to a teaspoonful was found most useful in phthisical patients.

As a summary, it may be said that no toxic effects were noticed. The drug was readily taken, and appeared to act, first, as a styptic; and, secondly, as a stomachic.

Another allied plant is the myrtus, or *Rugenia Cheken*, which under its last or Chilian name is already variously employed, chiefly in respiratory therapeutics.

Correspondence.

A PHYSICIAN'S SERVICES GRATEFULLY RE-MEMBERED.

Boston, August 27, 1894.

Mr. Editor: — The following instance of long-remembered gratitude for gratuitous medical service may be of interest to your readers:

Many years ago a well-known physician of Boston attended a lady who was unable to pay for his services. Years passed: the physician died, and his family became scattered. But in 1893, thirty years after the doctor's death, information was received by his children that a general of the English army had died in London, leaving a will containing the following clause: "I give and bequeath to the heirs of the late Dr. ———, of Boston, for attendance on my sister when I was too poor to pay him, the sum of ——."

The bequest was duly received and divided among the doctor's surviving heirs, and a modest piece of silver plate now serves to remind each one that an act of professional kindness is not always forgotten, even long years after the doctor's labors are over.

CHARLES M. GREEN, M.D.

METEOROLOGICAL RECORD.

For the week ending August 18th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

S12 30.15 64 70 59 79 65 72 S.W. S.E. 3 5 F. O. M., 13 30.02 63 65 61 93 92 92 E. N.E. 10 9 R. O		Baro- meter		Thermom- eter.				ive ity.			Velocity of wind.		We'th'r.		ches.	
Mr. 13 30.02 63 65 61 93 92 92 E. N.E. 10 9 B. O. 5 T. 14 30.10 65 68 62 92 91 92 N. E. 7 7 O. C. 6 W. 15 29.91 70 78 62 86 88 87 S.W. S.W. 10 14 O. O. T. 16 29.84 69 74 64 67 74 10 N.W. E. 17 1 C. C. F. 17 30.07 62 67 68 67 74 10 N.W. S.K. 8. 9 9 F. C.	Date.	Daily mean.	Daily mean.	Maximum.	Minimum.	┪		B	₹	8.00 P. M.	8.00 A. M.		į		Rainfall in inches	
	M13 T14 W15 T16 F17	30.02 30.10 29.91 29.84 30.07	63 65 70 69 62	65 68 78 74 67	61 62 62 64 58	93 92 86 67 67	92 91 88 74 68	92 92 87 70 68	E. N. S.W. N.W. N.E.	N.E. E. S.W. E. S.E.	10 7 10 17 8	9 7 14 1 9	R. O. C. F.	0. 0. 0. 0.	.2	

*O., cloudy: C., clear: F., fair: G., fog: H., hazy: S., smoky: R., rain: T., threatening: N., snow. † Indicates trace of rainfall.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, AUGUST 18, 1894.

	ġ	th	Ę	Per	centa	e of d	eaths f	rom
Cities.	Estimated popu- lation.	Reported deaths in each.	Deaths under five years.	Infectious diseases.	Consump- tion.	Diarrhosal diseases.	Whooping cough.	Diphtheria and croup.
New York	1,956,000	737	356	27.44	12.46	17.36	1.68	4.48
Chicago	1,438,000	· —	} _	-	_	_	_	_
Philadelphia .	1.139.457	l —	_	-	-	_	-	_
Brooklyn	1,043,000	445	215	24.42	10.78	15.18	1.32	5.94
St. Louis	540,800	l —	l —	_	_	-		-
Boston	501,107	217	105	27.60	10.58	18.40	1.80	5.52
Baltimore	500,000	_	_	-	_	-	_	_
Washington .	285,000	95	38	25.20	10.50	15.75	5.25	5.25
Cincinnati	325,000	115	53	20.01	1:.31	12.18	-	3.48
Cleveland	325,000	-	-	_	-	-	l —	_
Pittsburg	272,000	I —	—	-	_	_	_	_
Milwaukee	265,000	=	-		=	_ =	-	
Nashville	87,754	37	13	18.90	-	5.40	_	2.70
Charleston	65,165	-	-	-	_	_	-	_
Portland	40,000	-	_			==	_	
Worcester	100,410	38	21	18.41	7.89	13.15	_	2.63
Fall River	92,283	84	14	26.46	=	-		_
Lowell	90,613				11.76	23.52	2.94	. =
Cambridge	79,607	23	8	21.75	17.40	8.90	4.35	4.33
Lynn	65,123	18	10	44.44	16.66	83.33		_
Springfield	50,284	19	10	44.44	10.00	30.33	11.11	_
Lawrence	49,900	25	15	28.00	8.00	28.00	=	1111
New Bedford .	47,741	20	10	20.00	0.00	20.00	_	_
Holyoke	43,348 33,939	9	3	18.18		18,18	=	_
Brockton	33,155	22	14	31.85	_	31.85	_	_
Salem	32,925	12	6	25.00	16.66	25.00	_	_
Haverhill Malden	30,209	13	ğ	30.76	10.00	30.76		7.68
Ohalasa	29,806	13	6	23.08	15.86	000		7 69
MA-LL-	29,3:3	Î¥.	10	23.00		16.66	8.33	1.00
\$7	28,837	7	5	57.12	28.56	14.28	0.00	_
01	27,293	_	_					_
(T)	26,955	11	6	36.36	_	18.18	_	18.18
Waltham	22,058	3	Ĭ	33.33	33.33	83.38	_	
Quincy	19,642	_	i —.	_	_		_	_
Pittsfield	18,802	5	3	20.00	20.00	l —	_	_
Everett	16,585	9	1	88.33	_	33.33	_	_
Northampton .	16,331	8	2	25.00	_	25.00	_	_
Newburyport .	14,078	_		_	_		111111	=
Amesbury	10,920	2	2	_	_	_	-	_
							L	

Deaths reported 1,936: under five years of age 932; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 495, diarrheal diseases 310, consumption 207, acute lung diseases 137, diphtheria and croup 86, whooping-cough 34, typhoid fever 26, scarlet fever 15, cerebro-spinal meningitis 14, malarial fever 7, orysipelas 2.

From typhoid fever New York 10, Washington 6, Brooklyn 4, Nashville 3, Cincinnati 2, Worcester 1. From scarlet fever New York 6, Boston 4, Brooklyn, Cincinnati, Nashville, Cambridge and Newton 1 each. From cerebro-spinal meningitis New York 6, Washington 3, Cincinnati and Chelsea 2 each, Pittsfield 1. From malarial fever New York 5, Brooklyn 2. From erysipelas Brooklyn 2. From measles New York 1.

OFFICIAL LIST OF CHANGES IN THE STATIONS DUTIES OF OFFICERS SERVING IN THE ACCURAL DEPARTMENT, U. S. ARMY, FROM AUGUST 18, 1804, TO AUGUST 24, 1894.

Leave of absence for two months, to take effect on or about September 1, 1894, is granted Captain John L. Phillips, assistant surgeon.

Leave of absence for three months, to take effect on or about October 1, 1894, is granted First-Lieut. Madison M. Brewer, assistant surgeon.

Leave of absence for one month, to take effect on being relieved from duty at Fort Supply, Oklahoma Territory, is granted CAPTAIN WILLIAM H. CORBUSIEB, assistant surgeon.

FIRST-LIEUT. WILLIAM H. WILSON, assistant surgeon, will be relieved from temporary duty in the Department of Dakota by the commanding general of that Department, when his services are no longer required with troops in the field and will return to his proper station.

Leave of absence for one month, with permission to apply for an extension of one month, is granted Captain Alfred E. Bradley, assistant surgeon, U. S. A.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U.S. NAVY FOR THE WEEK ENDING AUGUST 25, 1894.

I. W. KITE, passed assistant surgeon, ordered to hold himself in readiness for orders to the U. S. S. "Constellation."

T. B. BAILEY, passed assistant surgeon, ordered to hold himself in readiness for orders to the U. S. S. " Machias."

RECENT DEATHS.

DR. JAMES KITCHEN, who for many years was a prominent physician in Philadelphia, died August 19th, aged ninety-four years. He was graduated from the University of Pennsylvania in 1822.

DE. PHILIP LANSDALE, medical director in the United States Navy, on the retired list, died Tuesday, August 21st. He was born in Maryland in 1817. He entered the navy as an acting assistant surgeon in November, 1846; became an assistant surgeon in March, 1847; was promoted to the rank of surgeon in January, 1861; to that of medical inspector in March, 1871, and medical director in June, 1873. He was placed on the retired list in April, 1879, with the relative rank of captain, and since then had made Philadelphia his place of residence. During his long, active service of a third of a century he was on duty in all parts of the world. From 1866 to 1869 he was stationed in Philadelphia.

The death is announced of Dr. Daniel Cornelius Danielsen, chief physician to the Bergen Leper Hospital, eminent for his lifelong researches on leprosy.

BOOKS AND PAMPHLETS RECEIVED.

Railway Spine. By Clark Bell, Esq. Reprint. 1894.

Abdominal Surgery on the Battle-Field. By N. Senn, M.D., Ph.D., LL.D. Reprint. 1894.

Can Typhoid Fever be Aborted? By J. E. Woodbridge, M.D., Youngstown, O. Reprint. 1894.

The Early History of the Bristol Medical School. By Augustin Prichard, F.R.C.S., Eng. Reprint. 1892.

The Johns Hopkins Hospital Reports, Vol. IV, Nos. 4-5. Report in Neurology, II. Baltimore: The Johns Hopkius Press. 1894.

Some Observations on Gonorrhea in the Male. Two Cases of Unclassified Infection. By W. F. Arnold, M.D. Reprints. 1894.

Differential Diagnosis of Alcoholic Coma from other Forms of Coma, with Especial Reference to the Care of Persons Found by the Police on the Streets in a Comatose or Semi-Comatose Condition. By Lewis D. Mason, M.D. Reprint. 1894.

A System of Genito-Urinary Diseases, Syphilology and Dermatology. By various authors. Edited by Prince A. Morrow, A.M., M.D. With illustrations. In three volumes. Vol III, Dermatology. New York: D. Appleton & Co. 1894.

Materia Medica, Pharmacy, Pharmacology and Therapeutics. By W. Hale White, M.D., F.R.C.P. Edited by Reynod W. Wilcox, M.A., M.D., LL.D. Second American edition, thoroughly revised. Philadelphia: P. Blakiston, Son & Co. 1894.

Lectures on Gastro-Intestinal Surgery; A Modification of Kraske's Method of Excision of the Rectum; A Tunnelled Fistulatome; Gastro-Enterostomy with a Modification of Murphy's Button. By H. O. Walker, M.D., of Detroit. Reprint. 1894.

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Original Articles.

THE PROTECTIVE POWER OF VACCINA-TION.¹

BY JOHN H. MCCOLLOM, M.D., OF BOSTON.

When, in the latter part of the last century, Jenner's attention was called to the fact that milkmaids and others who had the care of cows, although exposed to small-pox, had extremely mild attacks of the disease, England was passing through one of the most frightful epidemics of variola that the country has ever experienced. So dire was the havoc, so great was the distress caused by this disease in the middle and latter part of the last century, that anything that would have mitigated its severity would have been hailed as one of the greatest boons to mankind. In the present century epidemics of small-pox have been comparatively rare, and their ravages can in no way be compared to those of the epidemics of the last century.

The 14th day of May, 1796, a day memorable in the annals of medical science, is the natal day of vaccination, for it was on this day that vaccine lymph was taken from the hand of Sarah Holmes, a milkmaid, who had been infected from one of her master's cows, and inserted in the arm of James Phipps, a healthy boy eight years of age. He went through the vaccine disease in a regular manner. On the 1st of July following, the crucial test of the protective power of vaccination was made. The boy, who had been vaccinated in May, was inoculated with matter taken immediately from a small-pox pustule. He did not contract variola.

On December 8, 1802, the Board of Health of Boston published a report of the investigations of eleven of the most distinguished physicians of that time on the protective power of vaccination. The report commences with the following paragraph:

The Board of Health for the town of Boston, are happy to have it in their power, this day, to announce to their fellow-citizens the result of one of the most complete experiments which perhaps has ever been made, to prove the efficacy of the Cowpox, as a preventive against the Smallpox; and while they take the liberty to congratulate the public on this important discovery, they do earnestly recommend its introduction generally, and are confident that it will be the means of preserving the lives and adding to the happiness of millions.

The report then gives in detail the arrangements that were made to prevent any mistake in the conduct of the experiments, the relation of which need not detain us. The most important part, however, is the report of the physicians themselves, and this is so manifestly important that it will be quoted in full.

THE PHYSICIAN'S REPORT.

With a view of ascertaining the efficacy of the Cow-pox in preventing the Small-pox, and diffusing through this country the knowledge of such facts as might be established by a course of experiments instituted for the purpose, and thereby removing any prejudices, which might possess the public mind on the subject, the Board of Health of the town of Boston, in the course of the last Summer, came to a determination to invite a number of Physicians to coöperate with them on this important design; and with a liberality becoming enlightened citizens, erected a Hospital on Noddle's Island, for carrying it into execution.— Accordingly, on the 16th day of August last,

¹ Read before the Massachusetts Medical Society, June 12, 1894, and recommended for publication by the Society.

nineteen boys, whose names are subjoined, were inoculated for the Cow-pox at the office, and in presence of the above mentioned Board, with fresh, transparent Cow-pox matter, taken from the arms of a number of patients then under this disease. These all received and passed through the disease to the complete satisfaction of every one present, conversant with the disease.

On the 9th of November, twelve of the above children, together with one other, George Bartlett by name, who had passed through the Cow-pox two years before, were inoculated for the Small-pox on Noddle's Island, with matter taken from a Small-pox patient in the most infectious stage of that disease. The arms of these lads became inflamed at the incisions, in proportion to the various irritability of their habits, but not to a degree greater than what any other foreign, virulent matter would have produced. The Small-pox matter excited no general indisposition whatever, through the whole progress of the experiments, though the children took no medicines, but were indulged in their usual modes of living and exercise; and were all lodged promiscuously in one room.

At the same time and place, in order to prove the activity of the Small-pox matter, which had been used, two lads, who had never had either the Small-pox or Cow-pox, were inoculated from the same matter. At the usual time, the arms of these two patients exhibited the true appearance of the Small-pox. A severe eruptive fever ensued, and produced a plenteous crop of Small-pox pustules, amounting by estimation, to more than five hundred in one,

and two hundred in the other.

When these pustules were at the highest state of infection, the thirteen children before mentioned, were inoculated a second time, with recent matter, taken from the pustules, which said matter was likewise inserted into the arms of the seven other children, who were absent at the first inoculation. They were all exposed, most of them for twenty days, to infection, by being in the same room with the two boys, who had the Small-pox, so that, if susceptible of this disease, they must inevitably have received it, if not by inoculation, in the natural way.

Each of the children was examined by the Subscribers, who were individually convinced from the inspection of their arms, their perfect state of health, and exemption from every kind of eruption on their bodies, that the Cowpox prevented their taking the Small-pox, and they do therefore consider the result of the experiment as satisfactory evidence, that the Cowpox is a complete security against the Small-pox.

James Lloyd.
Samuel Danforth.
Isaac Rand.
John Jeffries.
John Warren.
Thomas Welsh.

BENJAMIN WATERHOUSE.
JOSIAH BARTLETT.
JOHN FLEET, JUN.
JOHN C. HOWARD.
THOMAS DANFORTH.

It must be borne in mind that the men who signed this report had abundant opportunity for observing small-pox, and therefore their testimony regarding the condition of these children after vaccination and after inoculation is of the greatest value.

Having shown that small-pox virus inserted in the arms of vaccinated persons is inert, it may be well to take a glance at mortuary statistics before and after the introduction of vaccination. In Boston, from 1721 to 1792, a period of seventy-one years, there were three very severe and fatal epidemics of smallpox, or one about every twenty-three years. Since 1792 to the present time, a period of over one-hundred years, there has been no serious epidemic of this disease in Boston. The outbreak of small-pox in 1872-73, in this city, bears no comparison in severity to the epidemics of the last century. In this slight epidemic of twenty-one years ago, the ratio of deaths to the thousand of the living was 2.9 in 1872 and in 1878, 1.2, while in the epidemics of the last century from one-third to one-fourth of the population succumbed to the disease; or, to put it another way, if the disease had been as prevalent and fatal in 1872-73 as it was in any of the severe epidemics of the last century, the number of deaths would have amounted to 64,300 instead of to 1,040. The investigations of a committee of the Epidemiological Society of London showed conclusively that in England out of every 1.000 deaths in the half century from 1750 to 1800, there were 96 deaths from small-pox, while that out of every 1,000 deaths from 1800 to 1850 inclusive, there were only 35 from this cause; a diminution of nearly two-thirds. In the German States it has been shown that out of every 1,000 deaths before vaccination was employed, 66.5 were caused by small-pox; but that after vaccination came into use there were only 7.26. The report from the British army is very conclusive in favor of the protective power of vaccination, because the regulation regarding vaccination is very strict. Every man is vaccinated at the time of his enlistment. During the Franco-Prussian war, when the French and Prus-Fian armies would alternately occupy the same villages and hamlets, it was found that the French soldiers, who were not carefully vaccinated, suffered from epidemics of small-pox of greater or less severity, while the Prussians, who were very carefully vaccinated, were almost entirely exempt from the disease. In the Prussian army from 1876-1885 inclusive, with an average strength of 300,000 men, there was only one death from small-pox; while in the French army for the same time, with an equal number of men, there was an average of 54 deaths from this disease each

The operation of compulsory vaccination was suspended in Zurich, Switzerland, in obedience to popular clamor in 1883. The deaths from small-pox, per 1,000 deaths from all causes for the two previous years and that year had been in 1881, 7; in 1882, 0; in 1883, 8. They rose after compulsion had ceased to be used to 11.45 in 1884; to 52 in 1885; and in 1886 to 85 per 1,000.

The history of the last small-pox epidemic in Montreal illustrates the beneficial effects of vaccination. As is well known, the French residents suffered much more severely than the English, because the latter were comparatively well vaccinated. It was not until the most stringent rules regarding vaccination were adopted that there was any marked abatement in the severity of the epidemic.

The public health records of Sweden show that the average number of deaths in each year from small-pox for one million of the living was from 1774 to 1801, before the introduction of vaccination, 1,973; while during the period of optional vaccination, from 1802 to 1816, the number fell to 479. The most marked diminution was reached, however, during the period of obligatory vaccination, 1817 to 1877, when the average number was only 189 per 1,000,000.

The difference in the number of deaths from smallpox in countries where vaccination is optional, as compared with those where it is compulsory, is very marked. For instance, in Austria-Hungary, in Russia and in France, where vaccination is optional, the deathrate from small-pox per one million of the inhabitants was in 1887 — 583.7; 535.9; 167.0; and in 1888 — 540.3; 231.5; 191.9; respectively. In the German Empire, where vaccination is compulsory, the rate per

1888, .8. In Denmark, in Norway and Sweden, where the laws regarding vaccination are very stringent, the death-rate for the corresponding years per 1,000,000,

It may be of interest to compare the percentage of deaths in the unvaccinated with those of the vaccinated in some of the English Small-pox Hospitals. In the London small-pox hospital, from 1870 to 1872, of 14,808 cases treated, the percentage of deaths in the unvaccinated was 44.8, while of those alleged to have been vaccinated, with or without the evidence of a scar, the percentage was 10.1. In the same hospital from 1876 to 1880, the percentage of deaths in the unvaccinated was 44.4; in the vaccinated, 8.8. In the Homerton Hospital, from February, 1871 to December 31, 1877, during which time 5,479 patients were treated, the percentage of deaths in the unvaccinated was slightly greater than in the London hospital, being 46.1; in the vaccinated there was a corresponding slight increase, the rate being 11.5 per cent. In the Deptford Hospital, in 1881, the percentage of deaths in the unvaccinated was 47.4; in the vaccinated and in those alleged to have been vaccinated, 11.3. In the Fullam Hospital the proportion of deaths of the unvaccinated was 44.2; of the vaccinated, 10.1. In the Dublin Hospital 64.2 per cent. of the unvaccinated died; of the vaccinated, 12.0 per cent. The total number of patients treated in these hospitals was 48,594; the average death-rate of the unvaccinated was 46.9 per cent; of the vaccinated and those alleged to have been vaccinated, 10.35 per cent. The criticism cannot be made with truth that these statistics err on the side of the vaccinated, for, as a matter of fact, they are in favor of the unvaccinated. If only the individuals who had two perfectly characteristic scars of vaccination had been classed among the vaccinated, the percentage of deaths would have been much lower than appears from the figures just mentioned.

In the report of an epidemic of small-pox that occurred in Sheffield, England, in 1887 and 1888, it was found that of 4,493 vaccinated children under ten years of age exposed to the disease, 7.8 per cent. contracted it, and that only one-tenth of one per cent. died; that of 13,435 vaccinated persons of ten years of age and upwards, 28.1 per cent. contracted the disease and 1.4 per cent. died; that of 18,020 vaccinated persons of all ages, exposed to the disease, 23 per cent. contracted it, and the death rate was 1.1 per cent. On the other hand, of 263 unvaccinated children under ten years of age, 86.9 per cent. had the disease and 38.1 per cent. died; of 469 unvaccinated persons, ten years of age and upwards, 68.6 per cent. had the disease and 37.1 per cent. died; of 736 unvaccinated persons of all ages, 75 per cent. contracted the disease and 37.2 per cent. died. It would seem that these figures ought to convince any one of the protective power of vaccination. Certainly a death-rate of one-tenth of one per cent. in the vaccinated as compared with a death-rate of 38.1 per cent. in the unvaccinated is a most conclusive argument in favor of vaccination.

The statistics of the epidemic in Sheffield also prove the importance of re-vaccination, which is just as necessary as primary vaccination. In every epidemic of variola the small number of the vaccinated who have died have been found, not among those who had recently been vaccinated, but among those who had been vaccinated fifteen to twenty years previous to the outone million for these two years was in 1887, 1, and in break of the disease. This was found to be the case,

in a marked degree, in the epidemic of 1872-73 in Boston. If we look at these Sheffield statistics again we find that the percentage of cases in the vaccinated under ten years of age was 7.8; that the deaths were .1 of one per cent.; while of the vaccinated of ten years of age and upwards the percentage of cases increases to 28.1, and that of the deaths to 1.4. In the class of the vaccinated of all ages, when those under ten years of age become a factor, the cases diminish to 23 per cent. and the deaths to 1.1 per cent. There is no such marked difference in the percentage of deaths among the unvaccinated, although there is a marked increase in the percentage of cases in those under ten years of age as compared with those of ten years and upwards; showing that unvaccinated children are particularly susceptible to the disease. The report of the Registrar-General of England for 1880 shows conclusively that during the period of optional vaccination in that country, from 1847 to 1853, the number of deaths from small-pox in children under five years of age, per 1,000,000 of the inhabitants, was 1,617; while in persons 45 years of age and upwards the number was only 22. In the period of obligatory vaccination, from 1872 to 1880, the number of children under five years of age, per 1,000,000 of the living, who died of the disease, was 323, as compared with 58 in persons of 45 years of age and upwards; showing a marked diminution in the number of deaths in children under five years of age, and a marked increase in the deaths of those of 45 years of age and upwards. These figures embrace both vaccinated and unvaccinated who died of the disease.

It has been claimed that the decline in small-pox mortality is due not to vaccination, but to improved sanitary conditions. If this were true, however, the diminution in other infectious diseases should be as marked as in that of small-pox, which is not the case. While the small-pox death-rate, in England, since the introduction of vaccination, has fallen 80 per cent, in children under five years, that of other diseases has fallen 6 per cent., while the small-pox rate has increased in a marked degree in persons over forty-five years of age, that of other diseases has fallen 3 per cent., or to look at it in another way, while the deathrate from other causes than small-pox, in persons of all ages, has fallen 7 per cent., the death rate from smallpox has fallen 49 per cent. This marked diminution in the death-rate from small-pox can only be explained by the protective power of vaccination.

In Boston since April, 1881, there have been 217 cases of small-pox. Each patient has been carefully examined in regard to vaccination, and although some of these patients claimed to have been vaccinated, yet, if a satisfactory scar was not found, the patient was classed among the unvaccinated. Of these 217 patients, 121 had been vaccinated, and they all recovered. Of the remaining 96 who did not show any evidence of vaccination, 46 recovered and 50 died, or about 50 per cent. Four of the patients who died stated that they had been vaccinated some twenty-five or thirty years previous to their illness, but as there was no evidence to the fact, as has been before stated, these patients were classed with the unvaccinated. If, however, they had been classed with the vaccinated, the death-rate would still overwhelmingly prove the protective power of vaccination, being 3.2 per cent. in the vaccinated, as compared with 50 per cent. in the unvaccinated.

The influence of a successful vaccination on the course of the eruption of small-pox is very marked. In a case of unmodified small-pox, no matter how mild the attack, the eruption always passes through the regular stages of papule, vesicle and pustule; while in a vaccinated person part of the eruption aborts, that is to say, the papules never become vesicles. If vaccination did nothing more than simply abort the eruption it still would be of inestimable value. When, however, we see vaccinated infants nursing mothers who have small-pox, without the children showing the slightest indication of disease; when we see vaccinated mothers nursing infants ill of the disease, without contracting it, it would seem that any sane man could have no doubt of the protective power of vaccination. The degree of infectiousness of small-pox in the unvaccinated is not fully appreciated. Small-pox is one of the most infectious diseases among the unvaccinated. For instance, during the last winter, in a house containing 25 people, exposed to an unrecognized case of small-pox, 16 of whom were unvaccinated, 14 contracted the disease and five of them died. All of the vaccinated escaped except one man who had been vaccinated 45 years ago, and he had an extremely mild attack of the disease.

The whole matter of protective power of vaccination can be summed up in no better way than by quoting the words of Dr. Russell, health officer of Glasgow, who says:

"After closely observing over 1,000 cases of smallpox in hospital, I have become deeply impressed with the helplessness of medicine when face to face with the unmodified disease. In this sense, the only successful mode of treating small pox is by vaccination. To take firm hold of its efficacy and necessity, and enforce their convictions in practice without wavering, is the most useful, almost the only useful action the medical profession can adopt against variola. When a case presents itself, the first question in prognosis is regarding vaccination, although then the chief work of vaccination has been done, inasmuch as the only other circumstance in the patient's condition which is worth mentioning as affecting the prospects of recovery is the extent of the eruption, which I shall show is the direction in which post-vaccinal small-pox is chiefly modified. If vaccinated, then the attitude is one of hope that the disease may be cut short, however bad present appearances are, though, in fact, the probability is that the symptoms are from the first trivial. If unvaccinated, then the attack will probably be severe, the eruption copious or confluent, and we recognize a virulence and deep constitutional disturbance against which the resources of medicine are powerless. As regards the individual, the opportunity for medical interference is past, and we can only turn his case to profit by following on those about him the practice from the neglect of which he suffers."

Having proved by statistics from the most reliable sources the great protective power of vaccination, it may be of interest to inquire into the possible dangers and discomforts that may attend or follow the operation. Since the introduction of the use of animal lymph, the danger of inoculating syphilis has been entirely removed. The chance, however, of communicating syphilis by vaccination in the days when humanized lymph was used, almost exclusively, was very slight. There is no well-authenticated and reliable report of such an occurrence in this locality. The

existence of many of the cases reported elsewhere, from careless and inaccurate statements regarding them, must be a matter of doubt to the careful, intelligent and unbiased observer. It has been too much the custom in the report of these cases to completely ignore the possible and probable existence of hereditary or acquired syphilis. If in a given case syphilis appears after vaccination, there should be the most careful and searching investigation in regard to hereditary or acquired disease; but this has not been the case in many instances. It is too much the custom of the laity and, I regret to say it, of some members of the profession, to apply the post hoc ergo propter hoc theory to explain the transmission not only of syphilis but of many other diseases by vaccination. Some few years ago a child, who had a slight eruption the nature of which was not evident at the time of the visit, was brought to me for vaccination. On account of this eruption the child was not vaccinated. he was seen six weeks later he had a perfectly char-If this child had been acteristic syphilitic eruption. vaccinated no amount of argument would have convinced his parents that the disease was not caused by vaccination. A false keloid tumor may appear at the site of the vaccination, but this has nothing to do with the quality of the lymph used, but is due to some peculiarity of the individual constitution. These false keloids do not cause any pain nor discomfort, but are simply a source of annoyance from their unsightly appearance. These tumors are extremely rare and occur only about once in ten thousand vaccinations. Urticaria is an annoying complication of vaccination, but it is not in the slightest degree a cause for apprehension, and can in no way be attributed to the lymph The appearance of this eruption, therefore, cannot with justice be used as an argument against vacci-The cases of vaccinal urticaria always recover in a short time. They are, however, a source of annoyance to the practitioner and are one of the most fertile sources of argument of the anti-vaccinationist; simply because the anti-vaccinationist is too ignorant of the whole subject of disease to appreciate the relative importance or non importance of any cutaneous manifestations occurring after vaccination. Six years ago I vaccinated a healthy boy three months old with fresh calf lymph. The vaccine disease went through its regular stages without any undue amount of constitutional The vesicles were not especially large. disturbance. On the eighth day after vaccination the mother of the child, who had never been vaccinated, was vaccinated from her child's arm. She had a perfectly characteristic vesicle, and she also had a very extensive eruption of urticaria. In this case the lymph itself, certainly, was not the cause of the attack of urticaria.

Eczema may possibly be aggravated to a slight extent by vaccination, and when there is no history of any special exposure it is well to postpone vaccination until the eczematous eruption has been relieved by treatment; but after a known exposure or during an epidemic of small-pox there should not be the least hesitation in vaccinating a person suffering from eczema. Dr. Lawson Tait reports in the British Medical Journal of 1871 two cases of eczema apparently cured by vaccination. These two cases are not sufficient to prove anything in favor of the curative power of vaccination on eczema, yet they are sufficient to show that vaccination does not always have a distinct injurious effect on this skin disease.

If a child when vaccinated is poorly nourished, and if there is no care taken of the arm, sometimes, by rubbing and scratching after the vaccine vesicle has arrived at maturity, and the retrograde process has commenced, pus organisms may be conveyed from the vaccinated arm to other parts of the body, causing an eruption of impetigo. Impetigo, however, is not a serious disease, and is very easily relieved by proper treatment. The eruption of impetigo has a very slight resemblance to that of small-pox, and this slight similarity has caused ignorant opponents of vaccination to assume that small-pox is caused by vaccination. This argument against vaccination is too absurd to need confutation.

Cel'ulitis of a somewhat severe type sometimes follows vaccination, but in nearly every instance the attack is due to injury of the vaccine vesicle after it has arrived at maturity. The almost total lack of care of a vaccinated arm is one of the most productive sources of this complication. With proper care on the part of the individual vaccinated, this trouble can almost always be avoided. The glands in the axilla do sometimes suppurate, it is true, and give rise to considerable pain, but this occurrence is so rare, and is so manifestly due to the individual constitution, that it cannot with justice be used to the detriment of vaccination.

Regarding the transmission of tuberculosis by vaccination, there is no proof that this occurrence has ever taken place. Blenheim, it is true, in the Centralblatt für Bakteriologis for May 1, 1874, reports a series of experiments in which he states that rabbits inoculated with vaccine lymph from a tuberculous cow, died from tuberculosis, but the number of rabbits used in this experiment is too small, and the period of incubation too short to prove anything. Blenheim, however, makes the wise and pertinent suggestion that all animals before they are used for the propagation of vaccine lymph should be tested with tuberculin. In France, there is a regulation requiring that an autopsy be made on each vaccinated animal before the lymph from it is distributed.

When the specific organism of the vaccine disease is discovered, as some day it surely will be, and that before long, every specious argument against vaccination will be swept away. If the lamented Dr. Stephen C. Martin had not been removed by an untimely death, it is not too much to say that probably pure cultures of the specific organism of vaccinia would now be in use. The advantage of a pure culture of this specific organism is obvious, for instead of propagating the lymph from animal to animal the cultures could be made in a laboratory where every safeguard against contamination could be adopted.

Much has been said regarding deaths due directly or indirectly to vaccination, but the most careful search of the records of deaths in this city, for the past twenty years, fails to show a single instance. The few cases in which vaccination has been alleged to be the cause of death have been, upon investigation, found to be due to some other cause, dependent in no way, either directly or indirectly, on vaccination. One case in which a child was vaccinated and died two weeks afterwards from pneumonia, as proved by the autopsy, is a fair sample of the alleged deaths from vaccination. In another instance a child died from scarlet fever four weeks after being vaccinated, but as the arm was nearly well at the time, the death of the child could

not be attributed to the effect of vaccination. Some few years ago a man about thirty years of age died, five or six weeks after he was vaccinated. There had not been the slightest irritation at the site of the scarification, although it was alleged that he died from the effects of vaccination. The autopsy proved that the man's death was caused by a complication of diseases due in no way to vaccination.

Since April 30, 1873, in this city there have been vaccinated at the public stations nearly 200,000 people, and although there have been some sore arms and a considerable amount of vaccinal uticaria, still there has been no instance of any serious trouble, causing the loss of either life or limb. Careful inquiries at the various hospitals show, that while a certain number of persons have applied for treatment for cutaneous manifestations following vaccination, and for sore arms, there has been no case where there has been any serious trouble.

If the dangers of vaccination were fiftyfold; if its protective power was only one-tenth of what it really is, no man, who has had any experience in the treatment of small-pox, could have any doubt of the value of vaccination to the community. No man who has been brought in daily contact with a person suffering from unmodified small-pox, one of the most repulsive diseases in existence; no man who can intelligently and with an unbiased mind study mortuary statistics, can have any doubt of the protective power of vaccination. This whole subject can be summed up in a few words by the quotation from Scripture placed on Jenuer's tomb: "And he stood between the dead and the living; and the plague was stayed."

In no better way can this paper be brought to a close than by quoting Jenner's epitaph, which very concisely embraces the whole subject:

"Within this tomb hath found a resting-place
The great physician of the human race, —
Immortal Jenner! — whose gigantic mind
Brought life and health to more than half mankind.
Let rescued infancy his worth proclaim,
And lisp out blessings on his honored name;
And radiant beauty drop one grateful tear,
For beauty's truest friend lies buried here."

THE ANTERIOR TRANSVERSE ARCH OF THE FOOT: ITS OBLITERATION AS A CAUSE OF METATARSALGIA.¹

BY JORL E. GOLDTHWAIT, M.D., OF BOSTON.

By far the most important feature of the human foot, when considered from a mechanical point of view, is the arrangement of the bones of the tarsus and metatarsus into arches, upon which the weight of the body is borne in standing or walking. These arches are arranged longitudinally and transversely, and the proper maintenance of both is important.

The longitudinal or antero posterior arch is the larger and the more important. Anatomically it is thoroughly understood, its pathological conditions are well recognized, and the methods of treatment are well defined.

The transverse arch is smaller, less noticeable, and of much less importance in the large majority of cases. Anatomically it is recognized; but its pathological conditions have not been considered. It is most no-

 $^{\rm 1}$ Read by title at the American Orthopedic Association, Washington, May 30, 1894.

ticeable at the tarsus, where it is formed by the cuboid, scaphoid and the three cuneiform bones, but extends forward as far as the metatarso-phalangeal articulations, where, although much less clearly defined, it truly exists. Its presence at this point, a fact which has been denied by some authorities, has been proved to the satisfaction of the writer by the careful study of frozen sections of feet, and of impressions of the feet taken while supporting different degrees of the weight of the body. In the tarsus it is quite rigid, and is obliterated only as the longitudinal arch is obliterated, both being supported at this point by practically the same structures. In the anterior portion of the foot or at the metatarso-phalangeal articulations, it is less marked, and is present only when the foot is at rest or supporting comparatively little weight.

When the foot is first placed upon the floor, the heel and the outer and inner portions of the ball form the points of contact. In this position the heads of the second and third metatarsal bones are in a plane distinctly above the others, and no weight is borne directly upon them. As more weight is added, the ball of the foot is gradually widened and the heads of the second and third metatarsal bones are lowered; these, together with the first metatarsal forming the chief support when all of the weight of the body is thrown upon the foot. At the same time the foot rolls outward: partly owing to a yielding of the antero-posterior arch, which causes a slight lengthening of the foot, and partly owing to the way in which the weight is received upon an arch that is poorly supported on the inner side. In this way the inner side of the foot is brought nearer the floor, and the centre of bearing is moved toward the inner side, thus relieving the outer side from much pressure. When the foot is raised or the weight taken off, the reverse takes place; the foot shortens, owing to the re-forming of the longitudinal arch; the second and third metatarsal bones are raised — or the anterior transverse arch is re-formed; and the heel and the outer and inner portions of the ball of the foot form the last points of contact. From this it is seen that in walking the relatious of the structures of the feet are constantly changing; the anterior transverse arch is continually being obliterated and reformed, the longitudinal arch is alternately lower and higher, while the ligaments which are involved are constantly stretched and relaxed, and the muscles are in the state of alternate rest and contraction.

The anterior transverse arch is formed by the heads of the metatarsal bones; the first and the fourth and fifth (which act together) furnishing the base, while the second and third are raised above this plane, forming, as seen upon cross-section, a low arch. This relation is maintained by the transverse ligament, the transversalis pedis muscle, and the tendons of the peroneous longus and the tibialis posticus muscles. The planta fascia, which is reinforced in its anterior expansion by transverse fibres, and the tendon of the flexor longus digitorum muscles—from its insertion and its oblique course across the sole of the foot—undoubtedly also exert some influence.

After studying a considerable number of cases in which the symptoms were referred to the feet, and after experimenting with various lines of treatment, the author is convinced that the obliteration of this transverse arch is the direct cause of many of the symptoms, and that its restoration in these cases is of the same importance as is that of the longitudinal arch

in the ordinary cases of valgus. With its obliteration, the weight is received directly upon the middle of the foot, the outer and inner sides no longer furnishing their normal support, so that nearly all of the impact comes upon the second and third metatarsal bones.

It is evident from the study of a large number of impressions of the feet that the obliteration of this transverse arch is very common - much more common than the flattening of the longitudinal arch — and that comparatively few persons suffer any inconvenience from it.

In a limited number of cases, however, this condition, usually so simple and of so little importance, becomes more serious, and symptoms develop which at times are most distressing and render treatment necessary. The two symptoms which are most common and which are present to a greater or less degree in almost all of these cases are irregular attacks of pain, referred to the anterior portion of the foot, and the presence of a painful callous in the middle of the The pain, which at times is constant and at other times paroxysmal (similar to that which has been described as anterior metatarsalgia) is usually referred to the centre of the foot, near the head of the third metatarsal bone. The location of the pain in the interspace between the fourth and fifth metatarsal bones — that which is described by Morton as being the common one — is certainly unusual, and the cases are strikingly few when compared with those in which the pain is referred to the middle of the foot. The callous, which may vary considerably in size, is formed directly under the heads of the second and third metatarsal bones, as the result of the undue pressure at this point, and at times is so painful as to render locomotion difficult.



Besides these two symptoms, which are such constant ones and of so much importance as diagnostic signs, the diagnosis can be confirmed, in the majority of cases, by impressions of the feet, as with the ordinary cases of flat-foot. In the normal foot there is a sharp re-entering angle where the impression of the ball of the foot joins that made by the outer side, as is shown in Figs. 1 and 2. Both represent normal feet: Fig. 1, a foot of the long, slender type; Fig. 2, the other extreme. When the transverse arch is lost the impression presents an entirely different appearance as is shown in Figs. 3 and 4. In place of the re-entering angle the tracing bulges at that point. In both of these cases the longitudinal arch is still present.

While it is possible to obtain an impression that is characteristic when the anterior arch is obliterated, this characteristic outline is lost if, at the same time, the longitudinal arch is destroyed. After some experimenting it was found that in the cases where the valgus deformity was not rigid, the impressions to determine the condition of the anterior arch could be taken by plates, pads or bandaging.

with the same degree of accuracy as when the longitudinal arch was present, simply by varying the amount of weight supported upon the foot. terior arch, when obliterated, does not re-form, so that even the lightest pressure will develop almost as characteristic an impression as when the foot is firmly placed upon the floor. With the longitudinal arch this is not so. When the foot is at rest (unless the

valgus is of the rigid type), the arch appears very much as normal: but as soon as pressure is put upon it, it gives way. Figs. 5 and 6 are impressions of the same foot, taken at the same visit. The first was taken with the foot supporting all of the weight of the body, both arches giving way; while, in the second, the weight supported was very much less. In the latter instance



Fig. 5.

the longitudinal arch remains, while the flattening of the transverse arch is clearly shown. The abduction of the foot which is present in the ordinary cases of flat-foot, does not, of course, occur when only the anterior arch gives way. This is also shown in Figs. 5 and 6, and is of importance in diagnosis.

The causes of flattening of the anterior transverse arch are much the same as the recognized causes of flattening of the longitudinal arch: excessive standing or walking; injury, such as a sprain, or a fall in which the weight is received upon the front part of the foot; weakness following long sickness; and very probably improper shoes, chiefly those which are much too nar-

The treatment of this condition naturally consists in the restoration of the parts to their normal relation the re-formation of the arch. In some instances this has been accomplished by simply bandaging the foot tightly, a method which prevents the foot from widening when weight is borne upon it, and consequently the arch from lowering. In other cases it has been done by the use of felt pads, or leather inner soles so padded as to bring pressure just behind the heads of the second and third metatarsal bones. A metal plate has also been used in some cases, carried forward and raised to cause pressure, as with the inner soles. Pressure coming directly under the heads of the bones is, of course, to be avoided, as it would increase the sensitiveness of the callous. In connection with this mechanical treatment, exercises, massage and stimulating bathing are of value.

CONCLUSIONS.

At the metatarso-phalangeal articulations there is an arch, called by the writer the anterior-transverse arch. This, at times, becomes flattened, and symptoms develop which are characteristic.

The symptoms most commonly met with are pain, referred to the anterior portion of the foot - the socalled anterior metatarsalgia - and the presence of a painful callous in the centre of the ball of the foot.

The impression of the foot is typical, and can be developed in many cases, even when the longitudinal arch also is obliterated.

The treatment consists in the restoration of the arch

Clinical Department.

A UNIQUE CASE OF RENAL CALCULI,1

BY STEPHEN H. WEEKS, A.M., M D., PORTLAND, ME., Surgeon of the Medical School of Maine and of the Maine General Hospital.

I am indebted to the patient, General Seldon Connor, Adjutant-General of Maine, for the very concise statement of his gun-shot wound received on the battlefield in 1864, and the subsequent history. I write it in almost his own words, which are better than any I can

In the battle of "The Wilderness," on the 6th of May, 1864, he received a compound comminuted fracture of the left femur. Exsection was performed at the field hospital by Drs. Dyer and Heywood of Massachusetts. He was taken to Fredericks, where he remained several days — until the river had been cleared of torpedoes, to admit the passage of steamboats and was then taken to Washington, where he had rooms at a private house for a few days, and was then removed to the Douglas Hospital, which was at that time under the superintendence of Dr. Thompson, afterwards of Dr. Norris. During this period the limb was kept on a double inclined plane, made on the field from bread boxes. It was so difficult to take proper care under the circumstances that the wound, and sores caused by abrasions under the knee, became maggoty. Upon his arrival at the Douglas Hospital he was taken from the inclined plane to a bed, and the wounded leg was put in a bran-box.

He had been in the hospital some four or six weeks when a secondary hemorrhage occurred. The surgeons were hastily summoned. An operating-table was brought in, stimulants given, and other preparations made for amputation; but he had lost so much blood, and was in such a weak condition, that the surgeons concluded that it would be fatal to operate. The tourniquet which had been applied as soon as the hemorrhage was discovered, was removed, and the flow of blood was stayed by digital compression. For four weeks there was some one at his bedside continually - either a nurse, a personal friend, or a volunteer from the Maine men (clerks) in the department holding the artery at the groin. Pressure was not required at all times; but occasionally there would be a cramp or contraction of the muscles which would cause the blood to spurt, and then pressure was necessary. The thigh became very much distended; and the danger of mortification was such that at the end of four weeks the clots were allowed to come away, and it was a great satisfaction to see that the after-flow was pus, and not blood.

He had been in the hospital some months, when one day he felt something pricking through the skin on the under side of his thigh as he lay on his back. surgeon was called, and he extracted a flattened piece of lead equivalent to about a third of the ordinary elongated bullet. It was either a part of a bullet made in sections, as some were, or a piece of a solid bullet cut off by the bone "in transit" and making a separate track for itself, thus escaping the notice of the surgeon who made the exsection. The main part of the bullet went directly through the thigh.

In the spring of 1865 there seemed to be some signs

that the bone was uniting, and to give him some relief by change of position, a Smith anterior splint was applied. It had not been on long when a pain in the knee caused him to have the surgeon called. He took off the splint, and found the knee-joint in a state of high inflammation, which was subdued by an application of ice for four weeks. At one time extension of the limb was maintained by a weight attached to the "bight" of a strip of adhesive plaster on each side of the limb. This caused a little sore at the ankle, which soon became an inflamed ulcer, extending for some distance around the ankle. This was healed, as the surgeon said, by the application of dry calomel.

He was very desirous of attending the "Grand Review" of the Army of the Potomac, May 23, 1865; and after some demurring from the surgeon in charge, he was allowed to go on a stretcher slung in an ambulance, with his leg encased in a plaster-of-Paris bandage. The ambulance was driven into an alley opening from the avenue, and he stayed there several hours. A few days afterwards he had a severe attack of chills and fever, caused, as it seemed to him, by the stay in the damp and unwholesome alley; and it was several

weeks before he got relief.

In August, 1865, he was taken on a stretcher to his father's at Fairfield, Me. After a week or so, dysentery came on, and reduced him to one-half his normal weight. His stomach rejected everything, even cold His attending physician, Dr. Boutelle, of Waterville, Me., called in consultation Dr. H. H. Hill, of Augusta. Dr. Hill suggested a mixture of the white of eggs, sugar and a little brandy. In his characteristic manner he said, "It's victuals and drink; and if you put brandy enough in, it makes very good lodging." The mixture proved potent. It was not more than a week after he began taking it when his stomach became strong, and imperatively demanded food; and he began to eat beef and mutton, and to gain nearly two pounds a day in weight.

On the first day of January, 1866, he stood up for the first time, with the aid of crutches. In the spring of that year he accidentally fell and re-fractured the femur; and it was more than a year before the fractured bone united sufficiently strong to make it safe for him to use it at all.

When he was so much reduced and weakened by dysentery, his right leg drew up, and an abscess formed in his right groin, discharging a large quantity of pus when opened. So far as he knows, there was no other

cause for the abscess than the low state of his system.

His health had always been good. The only serious illness he had ever had before his army service was typhoid fever when he was seventeen years old. He enlisted as a private in the First Vermont Volunteers, early in May, 1861. When he went into camp at Rutland, Vt., it was freezing weather in that mountainous region, though the month was May; and he took a severe cold, which assumed a chronic catarrhal form, and he did not fully recover from it until the following winter, though he was on duty all the time, going into the Maine regiment immediately after the conclusion of his three months' term of service in the Vermont regiment. In the spring of 1862 he had an attack of dumb ague on the Peninsula; and he also contracted the diarrhea from which few men who served in that pestilential region escaped. He was more fortunate, however, than many, because, by care and treatment and especially by wearing a flannel

¹ Read before the Maine Medical Association, June 13, 1894.

bandage around the waist, he practically recovered after a year or so.

At the time he received his wound, he was in robust health and vigor, six feet one and one-half inches in height, two hundred pounds in weight, and twenty-five years of age. His sound digestion carried him safely through the long period when the suppurating wound required him to consume at least twice as much nourishment as his ordinary allowance in a normal condition. With the exception of the fever and ague and the supervening dysentery, which lasted about six months - from the attack of fever and ague, about June 1, 1865, until his recovery from the dysentery some time in the late autumn following - his general health continued good from the time he was wounded throughout his entire confinement on account of the wound.

The only illness he had after that period was an occasional headache. From his boyhood he had a headache now and then, but not of a severe type. After he got about on his recovery from the wound, his sickheadaches became more frequent and more severe. He thought that he could always trace the cause to some indiscretion in diet, to exposure to wet or cold, to want of exercise, to fatigue, etc. With that exception he had no ailment of any kind until 1887. In the summer of that year he had an illness to which his physician gave no name, and for which no cause could be assigned. He was weak and lethargic, and had profuse night-sweats; and his urine was dark-colored, turbid and of strong odor. He was ill two or three weeks, and then resumed his usual health, although his urine continued to be dark and to retain the peculiar odor it had during his illness.

He had it examined by Dr. I. E. Kimball of Portland, who reported that he found in it no indications of organic disease of the kidneys, only of functional de-

rangement (indigestion).

In 1891 he was attacked one night, without any premonition, with a feeling of distress in the region of the stomach and bowels. He was not able to exactly localize the feeling. He was weak and began to have severe chills. The physicians who were first called were unable to account for these symptoms. After a few days, his brother-in law. Dr. J. F. A. Adams, of Pittsfield, Mass., came to see him, and I was called in consultation. After learning the history of the case, and making an examination of his condition, together with an analysis of the urine, we were of the opinion that the trouble was in the pelvis of the kidney. After a short time pus became mingled with the urine, which tended to confirm our diagnosis. Through the mouth of June he was confined to the bed, and was quite seriously ill, the urine containing large quantities of pus. He did not recover his health and strength sufficiently to enable him to leave the house and attend to business, before the last of August following. He was as well as usual through the fall and winter, and a little fleshier than he had been for a long time.

In the spring of 1892 two large, painless swellings somewhat suddenly and unaccountably appeared; one in his right groin, and one in his right thigh, a few inches below the groin. For several weeks he was about his business without feeling much inconvenience or paying much attention to these swellings. I made applications of discutient lotions, and finally ordered poultices. Under the use of poultices the swelling in

tion. I then opened it, and for several weeks there was a slight discharge of pus. One morning, in dressing the opening, a small stone was found, which, on examination, was found to be a small renal calculus of uricacid formation. This occurrence threw a flood of light upon the whole history of the case. The next day I put him under ether, made a free incision into the swelling in the thigh, enlarged the opening in the groin, and removed from each opening a renal calculus as large as a cranberry bean. The facets on the stones would indicate that they were formed together, or in contact one with the other. The wounds healed; the one in the thigh completely, the one in the groin leaving a sinus extending upwards and backwards in the direction of the right kidney, and reaching well nigh down to that organ. This sinus was kept open, and was washed out daily - sometimes with a bichlorideof-mercury solution, then with tincture of iodine, and then with the peroxide of hydrogen. About one year ago another small stone, about the size of the first one that came out, came away.

This plan of treatment was continued up to a few weeks ago, when the discharge became so slight that I discontinued the injections into the sinus. It is now very small; there is almost no discharge; and from the depressed appearance of the external opening, I have no doubt that in a short time it will be completely closed.

There have never been any indications of urine in the discharge, and no pain has been felt in that region. He is now in good health and weighs 202 pounds. He has had few headaches the past two years, and they have been slight, and traceable to some sufficient cause.

To me this case is unique. This is the only one I have ever seen; and I have never read of one like it. These calculi must have formed in the pelvis of the kidney, and by their presence produced pyelitis, which was the nature of his sickness during the summer of 1891.

This suppurative inflammation of the pelvis of the kidney led to perforation by the process of ulceration, and the escape of the calculi from the pelvis of the kidney into the perinephritic tissue.

From the time of their escape from the seat of their formation, probably some time in June, 1891, to the time when I removed them in May, 1892 - about one year - they were slowly working their way in the cellular tissue down along the course of the psoas magnus muscle until they reached that point in the thigh and groin where they were removed.

It was a most marvellous feat of nature that closed up the large opening in the wall of the pelvis of the kidney, through which the stones escaped, thereby preventing the flow of urine through this artificial opening, and the formation of a permanent urinary fistula. It has seemed to me that a case so rare as this, and so fortunate in its termination is worthy of a permanent

place in our published transactions.

Thus far I have said nothing of the cause of the formation of these calculi in the pelvis of the kidney. It has been my experience to find that calculi form in the kidneys from lying for a long time in the recumbent position; especially is this so where there has been great exhaustion from any cause. I feel confident that the long confinement after the gun-shot fracture of the thigh, together with the long-continued the groin softened, and I detected deep seated fluctual suppuration, which must have resulted in more or less

absorption of decomposed pus into the blood, produced a peculiar diathesis of the system which predisposed him to the formation of the calculi, and may have even awakened a low grade of pyelitis which acted as an exciting cause of their formation.

Their formation was slow, I have no doubt, and may have extended over many years, the foundation of their formation being laid during his long hospital

experience.

TWO UNUSUAL CASES OF MALARIA: ONE OF REMITTENT FORM, FOLLOWED BY DEATH; THE OTHER A MARKED INTERMITTENT, SUCCESSFULLY TREATED.

BY ELDRIDGE G. CUTLER, M.D., Visiting Physician, Massachusetts General Hospital.

J. B. H., twenty-five years old, single, chemist, born in Lowell and living in Chelsea, entered the Massachusetts General Hospital July 13, 1892, sent in by Dr. Fenwick.

Family history negative.

Personal history: No alcohol or venereal diseases. Excess of tobacco. Lived in New Orleans, La., four

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months, returning north a year and a half ago. In North Weymouth for one year, and in the Bradley Fertilizer Company.

Present illness began five months ago, as "tertian chills and fever": and, with some intermissions, he has been sick ever since. There has been no chill for the past week, but high fever has been constant. The past few days there has been a slight cough. There has been no nose-bleed; the bowels have acted only with medicine. Delirious the past few days. Skin and eyes yellow one month ago. Urine coffee-colored at the time. No pain.

Examination: Cheeks flushed. Tongue dry, red, fissured. Patient has a peculiar animal odor. Heart sounds confused, lacking the usual booming quality. Pulse dicrotic. An edge of solid organ felt three inches below the left costal border in the splenic region, with which

edge splenic dulness corresponds. Abdomen full, tympanitic. No rose spots. Stools diarrheal, yellow, involuntary. Urine involuntary: shows diazo reaction. (Typhoid precautions. Milk, eight ounces every two hours. Whiskey, half an ounce every six hours.) Urine was normal in color, acid, 1,012 specific gravity; albumin faint trace; no sugar; sediment slightly flocculent, and chiefly mucous, squamous epithelium and leucocytes; no casts found; heavy diazo reaction.

July 14th. Pulse dicrotic. Muttering delirium. room, and amply covered with bedding. He referred

Subsultus tendinum. Take snourishment fairly well. Does not attempt to get out of bed so much as last night. Whiskey was increased to half an ounce every two hours, and quinine given. Blood examination shows a few hyaline crescentic masses granular in centres.

July 15th. Abdomen more distended and tym-

July 15th. Abdomen more distended and tympanitic. Edge of spleen (apparently) felt as before, three inches below the costal border. Patient is quieter; nervous symptoms not so marked. Heart sounds still confused; no murmur. Petechiæ scattered over the abdominal integument. Pulse not quite so dicrotic. Fever continuous, but less severe than day before.

July 16th. The stimulus and quinine were increased, and digitalis added on account of the pulse. The pa-

tient was more stupid and quieter.

July 17th. The heart and pulse were improved a little by the treatment. Careful examination of the lungs did not account for the rapid respiration. The petechiæ increasing daily, and are situated principally in the upper abdomen above the umbilicus; they are larger over the splenic area.

July 18th. Respiration gradually became suspirious. Patient got weaker, the heart's action more feeble,

and he died on the morning of the 19th.

The autopsy was made by Dr. F. B. Mallory, two and a half hours after death. Brain normal. Heart small; valves and cavities normal; muscular substance pale and firm. Lungs small; purple areas of atalectasis along lower border; considerable edema; small bronchi contain a grayish fluid. Spleen enlarged, weighed three pounds, five ounces; fairly firm; measured twenty-two centimetres long, twelve broad and five thick; dark color; borders thickened, and showed numerous yellow opaque areas under the capsule. On section, dark-purple color of surface; not soft or pulpy; showed numerous small, yellow areas surrounded by reddish gray, and containing in centre of many a small lumen. Supplementary spleen of small size. Kidueys, on section, pale and somewhat opaque. Stomach normal. Intestines normal. No swelling or ulceration of Peyer's patches. One small, irregular area of cicatricial tissue in colon a few inches from the ileo-cecal valve. A fecal concretion, size of and shape of pea, in the end of the appendix. Lymph glands in the region of the stomach and paucreas and along the abdominal aorta, to a much less extent in the mesentery near the cecum, were enlarged, and gray and translucent on section. Liver normal.

Dr. Fenwick, in answer to inquiries a few days later, wrote as follows of the patient: "Mrs. Andrews (where he had been boarding for the last year or more) states that Mr. Hovey came to her house a year ago last March. He had been in New Orleans, La., for about four months — on his way home stopping over in Washington, D. C., for a few days. After arriving home, he was in poor health. He had paroxysms of fever, and at times complained of being chilly; was confined to the house for a week or more, and finally got about. He stated that he thought he had malaria. On February 20, 1892, he came home complaining that he felt sick; had been exposed to severe cold, and had wet feet, and had been working fifteen hours a day during the week previous. On arriving home he went to bed, and was not up for a week. He could not be made to feel warm, although he was in a warm



his cold feeling to his stomach. After six or seven days he began to get better, and his appetite returned. About the last of February he again began to have a chilly feeling, followed by fever; these attacks were noticeable about every second day. Fever always followed the chilly feeling." This condition continued till the 18th of March, 1892, when Dr. Fenwick was called, and "found him with a high temperature (104° Fahr.), pulse 120, coated tongue. He had a chill, or cold stage, a few hours before I arrived. My history of the case is similar to that detailed by Mrs. Andrews. The patient was put on increasing doses of quiniæ sulph., the first twenty-four hours to take twenty grains, then to follow with five grains three times a day. Did not see the patient again for several days (think ten). On my second visit the condition had been more favorable. He discontinued the treatment on account of its being distasteful to take. He was advised to persist in taking the quinine, which he did with more or less regularity. I considered his case one of malarial fever, and persisted in the necessity of adhering to the treatment. I was not considered as having the responsibility of the case till about one week before I urged his going to the hospital. About seven or eight days before entrance to the hospital the fever assumed a continuous form. I have reason to suppose that the case was one of remittent fever, probably originating in New Orleans during the four months' stay in that city."

I report this case because it is the first remittent malarial fever I have ever seen. The sickness was reported to have begun as "tertian chills and fever," five months before he came to the hospital, though on what grounds it was called tertian is not clear. From the description it appears that the patient was sick for a week or more - at first with fever, and at times chilly sensations. The next attack lasted a week, and he was cold most of the time. In the next attack there was fever for a week, with chills about every second day. In other words the fever was continuous, with remissions and chills; finally, continuous fever for about two weeks. The crescents, granular in the centre, were found in the blood on the second or third day at the hospital by Dr. Stowell, the house-officer, who had had a good deal of experience in examining blood, and his report is reliable. This observation is of interest, in view of the assertion of Marchiafava and Celli that remittents have distinct species of organisms in the blood, and the crescents represent a phase in their development.

Dicrotic pulse is spoken of as occurring in this form of fever, though Osler says it is rare. The presence going. So given directions for quinine, and discharged of the heavy diazo reaction is of interest in emphasizing the fact that it is of no importance in this disease in differentiating typhoid. In the post-mortem report I was struck by the absence of any mention of pigmentation of any of the organs. This, to be sure, may be a microscopic appearance, and it may have thus escaped notice. I had thought that the spleen was examined microscopically for organisms, but find no mention of such examination in the report.

Finally, a word about the giving of quinine. have followed the method advised by Dock in ordinary This patient received about forty grains a day for several days; and as it did not seem to do any good, it was omitted. I do not remember whether it was given subcutaneously or not. We had done so by the uncomplaining, patient way in which they passed previously in other cases.

P. G. S., twenty-three years old, single, born and with his home in Long Island, a machinist, was admitted to the Massachusetts General Hospital Friday July 7, 1893.

Family history negative.

Personal history: Slight excess of tobacco. Denies alcoholic and venereal diseases. For eight years attacks like the present have come on, generally in August and September, not especially in hot times. No cause known. These attacks last three or four days, and he loses about a week's work. No special treatment. No delirium or coma in any previous attack.

Present illness: Four days ago, at four o'clock in the afternoon, bad headache; awake all night with the headache and tin horns (evening of July 4th). Steady headache and anorexia since; worse in the afternoon. Vomiting two nights ago. Hot and thirsty all along. Bowels have moved daily. Poor sleep. Has worked half-time till to-day. No chill at any time. No cough. No pain except in head. No special mental or physical strain. Remembers feeling sick about noon yesterday and going to the hotel. Remembers nothing since, till this morning (July 8th). Does not remember being brought here. Friends say he became delirious about

Examination: Brought in herdic, wildly delirious, very weak, pale, cold extremities, hardly to be kept in bed. Answers irrational. No smell of alcohol. Pupils negative. At times double internal squint. Tongue straight, moderate coat. Pulse 100, regular, feeble. Temperature 102.6° Fahr. Respiration 40. Chest negative. No spots on the abdomen. Spleen at the seventh rib, and extending to one inch beyond the costo-articulation. No edge felt. Knee-jerks normal. No paralysis. No tenderness. Swallowed all right, and within a few hours was quiet and rational, and slept well. (Enteric precautions; liquids ordered.)

July 8th. The above history was got this morning. Feels perfectly well, and wonders why he came. Spleen palpable. Temperature normal. Respiration 23. After hunting for two hours, Dr. Richard C. Cabot found one plasmodium in active motion. chill at any time. (Omit precautions.)

Typical malaria chill. July 9th. A few pigmented, actively moving plasmodiæ found. As temperature began to decline, five grains of quinine every hour, for five doses, were given; some of it was vomited.

July 10th. Feels entirely well, and anxious to go. July 11th. No rise of temperature. Insists on

In a letter received a month later from his home in Long Island, he says: "Some days I feel quite well, and some I feel miserable. If I forget the quinine, I have chills the next day, and some fever. I am satisfied that I got this malady in Boston."

Dr. Tenney kindly called my attention to two cases quite like this above, reported in the Medical News of April 7, 1894. Maniacal delirium occurred in each case, and lasted some time; but after some hours yielded to moderate doses of quinine.

An experienced Medical Officer of Prisons has said that sick convicts remiuded him of the lower animals through severe illnesses.

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Reports of Societies.

CLINICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

HENRY JACKSON, M.D., SECRETARY.

REGULAR Meeting, Wednesday, April 18, 1894, Dr. F. C. SHATTUCK in the chair.

DR. E. G. CUTLER reported

TWO UNUSUAL CASES OF MALARIA; ONE OF REMITTENT FORM FOLLOWED BY DEATH, THE OTHER SUCCESSFULLY TREATED.1

Dr. W. T. Councilman: With regard to the parasites in the first place; the crescents which Dr. Cutler described first are so perfectly characteristic that there would be no possibility of mistaking them for anything else. The crescents are interesting to me because they were first seen and described by Virchow, and accurately depicted in 1854. In the fourth volume of his Archives in an article on "The Pathological Pigments," he describes them as found in the blood in intermittent fever and considered them to be the endothelial cells from the spleen containing pigment; but there is no question that they were these crescentic organisms. They are crescent in shape, and contain a mass of intensely black pigment in the middle of them. We may have them in that shape, or simply as long oval bodies with this pigment in the centre. is quite interesting that frequently there is a very fine line on the concave surface of the organism which may possibly represent the remains of a red blood-corpuscle, although the line has not been fully explained. I do not think, with regard to the development of these, that we know anything at all. These organisms are especially apt to be found in the cases with malarial cachexia, remittent fever, etc. It is very rare that we find organisms of this type in the typical intermittent fever; sometimes they may be found. They may be found when the intermittent type of fever is passing away, and it is passing into a condition of malarial cachexia.

The other forms of the organism are also perfectly characteristic. The other forms which we have in the ordinary intermittent types are totally different from this. The course of development of these organisms is perfectly simple. The first thing we see, if we follow the case from the end of the chill, is a very small body inside of the red corpuscles, which undergoes active ameboid movements. After a time, pigment begins to appear in this, and when the pigment begins to appear the corpuscle becomes paler. The body increases in size, the pigment increases in amount, takes on a more or less round shape, and finally may fill up the corpuscle almost entirely. It goes through that course of development in forty-eight hours; and some time before the development of the next chill we notice changes in it. Several hours before the chill is going to take place the pigment groups itself more or less in a line. The pigment ceases to be diffused in the corpuscle. In the next stage these segments become perfectly well marked. We see them radiating out from the centre of the organism, very much like the spokes of a wheel. Finally, the whole matter breaks up; the outer husk of the organism breaks up entirely, and these small masses become free in the blood and we can find them free in the blood at the end of

¹ See page 237 of the Journal.

the chill. This process of segmentation takes place during the chill; and we may find masses that apparently result from segmentation of the group, or we may find a single one. We may find at this time masses of free pigment in the blood; and this free pigment in the blood which has come from the breaking-up of the organism is taken up by the white corpuscles.

The other form of the organism which we find is the one which always attracts the most attention, from the very peculiar whirling movements which it has. It is an organism about the size of this. It is freely pigmented; the pigment is in quite active motion, and after watching the pigment for a time in active motion, the organism apparently thrusts out long processes from various parts of its surface. These processes usually have small beaded masses on them, and these are in very active motion. The organism whirls round and round, and thrusts the red corpuscles aside, making little whirlpools and eddies in the blood, which in the preparation call attention to the organism. One of the most peculiar things about it - and which would show that these bodies are not the ordinary cilia - is that they become detached and undergo independent movement of their own, and when ordinary cilia are separated they cease to undergo active motion.

These are the organisms always found in the cases of intermittent fever. The observations I made on malaria were made quite a number of years ago, and I think the views have changed somewhat; but in an ordinary case of intermittent fever (tertian) we are sure to find these forms, and always find this segmentation just before the chill, and completed during the chill period. The spherical, ciliated bodies are peculiar. We find them only in a certain number of cases; and it has seemed to me they are more frequently found in blood drawn from the spleen than in any other place, and they have been found after death in the blood taken from the spleen. The crescentic forms I have scarcely ever found in the regular cases of intermittent fever; but they are found in cases of malarial cachexia and so-called dumb ague, remittent fever, etc.

I have seen seven cases of the comatose malarial fever, which is apparently the same fever which prevails on the coast of Africa, and in various other places. The patients have a chill and never recover from it, passing into a comatose state. In all seven of those cases, only one of which recovered, these organisms were found in the blood in enormous numbers. The presence of them with the pigment within in the capillaries of the brain gave the organ a perfectly chocolate color. These cases were usually brought into the hospital in a perfectly comatose coudition, and the urine was usually examined and albumin found in it. They were put down as cases of uremic coma, and that condition of the brain and of the blood would be found on examination.

With regard to the absence of pigment in the spleen, I am rather surprised at that, because I have never seen a case of death from malaria without the presence of pigment in the spleen and liver as well. The pigment remains in the organs for a very long time after recovery from the disease.

DR. GREENLEAF: I have been much interested in the cases reported. The etiology also of intermittent fever assumes an especial importance to us at this time in connection with our contemplated park improvements. An impression prevails hereabouts that in some way our rivers are especially at fault in the causation of our recent epidemic. "Sewage" and "marsh miasms" also are still spoken of as causative factors. But we may dismiss all such except as possible transporting agents; for thanks to the researches of Professor Councilman and others, we now know that a definite micro-organism is the causative factor. This is frequently called a plasmodium; but as that name is already given to a lowly plant consisting of a mass of ameboid cells (the mass oftentimes being one, two and even more centimetres in diameter), it is better to speak of this as the hematozoon, which, as Dr. Councilman has so graphically described to us, is a micro-organism of a protean, unicellular character in the group of monads, the lowest in the ascending scale of animal life. It would seem a very easy problem to demonstrate the life history of the hematozoon outside the body, as in the soil. There are two obstacles to such demonstration. In the first place, inoculation experiments from the blood of intermittent fever cases in animals have proved failures. A second obstacle is that we find the soil teeming with micro-organisms. Numerous allied forms are found; and it would seem as if on finding a specimen of soil with such microorganisms - if taken from the locality where intermittent fever cases had arisen — that the next step in establishing a very close connection would be an easy one. Such is not the case, as the soil is also rich in the bacillus of tetanus, and if inoculations are made with soil micro-organisms, the animals experimented on die from tetanus before signs of intermittent fever are produced. We must therefore rely on other data to give us an idea of the habitat of the hematozoon and its mode of entrance to the body.

A study of the distribution of intermittent fever shows that it is widespread, being found almost everywhere except in the arctic regions and dry countries. It is more abundant in the tropical regions, and is always found in connection with moisture. It is rare among sailors, and rare in well-drained localities, even if rivers and ponds are present among them, showing that the micro-organism is not a water animal, though it may probably be carried in it. It is usually abuudant where rivers or ponds have overflowed their banks and created conditions of decaying vegetation due to the retreat of the waters. It is common where water is collected in stagnant pools; so that we must look upon the association of moisture with decaying vegetation as a possible habitat of the micro-organism, which is known to be the case with some of its relatives. Furthermore, we shall find that intermittent fever is endemic in new countries, for instance, in the West; and when our own conditions were such, it was then present here. Dr. Holmes, in his prize essay, establishes beyond doubt that our ancestors found intermittent fever in this part of the country. There have been two or three notable epidemics, one at the close of the seventeenth and another at the beginning of this century. There have been periods in which it was absent for a long interval. It was so rare in this vicinity until about eight years ago that the diagnosis of intermittent fever would be questioned. However, if you compare the various reports of statis- the same hill-top, but on a part covered with forest ticians, you will find that intermittent fever has oc- growth. The conditions otherwise, including milk, curred in some part of New England during the inter- water supplies, etc., were the same. vals. In Brookline, where cases have occurred in buildings were occupied, scarcely a case occurred in the abundance lately, cases did occur at quite a remote boys' dormitory, but the girls were taken sick, five or period; one case was reported in about 1855. That six of them a day, until a considerable number of them

ease was so rare, and as the boy had previously lived in Brooklyn, N. Y., but he had lived solely in Brookline for the three years preceding his attack. That may fairly be looked upon, I think, as a possible case of intermittent fever arising in this locality. Then in Cambridge cases have occurred annually for the past twenty-three years about the clay pits. Two or three days ago I had a letter from a physician who practised in Boston about fifty years ago, and he wrote of a case in a boy on Eliot Street; so that we could hardly find a time when there was not intermittent fever during this long period.

Many writers regard our present epidemic as having originated from other areas, for example, some speak of it as coming from the endemic centre of New Jersey. But supposing it came from without, how did it get here? Certain observers consider air to be the active transporting agent, thus carrying the germs for short distances. Others look upon water as the vehicle, that is, our rivers. These latter regard the origin of our present epidemic as among the head-waters of the Charles and Sudbury. Supposing these rivers are the active cause in spreading the epidemic, how does it come about that the special cases are distributed in such localized areas? One of the established laws in the study of epidemics is that, as in the case of typhoid fever, when the cases are diffusely and uniformly distributed, when dotted on the map, they present a characteristic curve showing the action of a general widely acting cause; whereas if we have localized cases, the curve would be of a distinctly localized character, pointing to local causes. Professor Sedgwick brings this out in connection with milk-supply in reference to the typhoid fever epidemics. When we come to plot the cases of intermittent fever of this area, they do not show a general diffused distribution. They occupy local areas, so that we may assign to them local causes. That brings us back to the original question. There are numerous cases which point to just such conditions hereabouts as I spoke of at the outset, namely, conditions of local dampness in connection with decaying organic matter, the débris of swamps, débris on the mountain side where the vegetable growth has been disturbed.

The conditions at the School for Feeble-Minded in Waltham are most instructive in this connection. Four or five large buildings have recently been erected here. They are on a hill-top, some two miles from the river. One of the buildings was built over an excavation made through a considerable amount of decaying forest growth. Almost immediately after occupancy nearly every inmate was seized with malarial disease. Two of the other buildings presented somewhat similar conditions. On another part of the hill-top four buildings were placed in the form of a quadrangle, one was the executive building, one the school building, and the other two were occupied as dormitories — one for boys, the other for girls. The boys' dormitory was constructed on land which had been cleared and well drained for a great many years. The girls' dormitory was built on case was considered a foreigner then because the dis- were affected with intermittent fever. In view of

cases, and also of the fact that our forefathers found intermittent fever here, are we not justified in concluding that the germs have been present in some of our woodlands all this time and may infect neighboring places whenever we combine the conditions favoring their development, such as the digging up of forest it is because we have practically changed these conditions. Most of our towns were built years ago, were pretty well drained or sun dried at the surface; and we have freed ourselves from intermittent fever. In the last few years there has been a renaissance of buildings. Coincident with this great digging-up of the soil and cutting down of woodlands one epidemic has come in. We cannot say beyond a question that this has been an area with latent intermittent fever all this time, but in view of these facts it would be quite as probable an hypothesis as any. At all events it would be wise from a practical standpoint to take the same measures regarding new buildings as are taken by residents of the West, that is, not to live in such until the land has become thoroughly dried, and when no excavations are going on, and to take especial care in regard to cleanliness. I find that a great many of the cases occur among workmen, a possible method of introduction of the germs being their careless method of eating with soiled hands. Currents of air from afbodies by inhalation; and we must certainly regard the drinking of water from a suspected soil another possible source of infection, though if our rivers were full of the micro-organism, as some suppose, many their distribution would have been different.

Dr. Councilman: I should like to ask if any cases of hematuria or hemoglobinuria of malarial origin have occurred in Boston or vicinity. It is very remarkable about that. We have in Maryland almost every possible form of malaria including the comatose form; but that so-called malarial hematuria or hemoglobinuria never appears there. It is a disease put down to malaria, but it has a very well-defined district of distribution. You find it in the eastern part of Virginia and in the Mississippi Valley; but I do not think it occurs in any other places in the country.

DR. CUTLER: The first year I was in the hospital as visiting physician there were no cases; the next year two or three; the next year several; and last year quite a number. Speaking about the occurrence of malaria in certain localities, I remember perfectly well to have seen a person who came from a distant place - not a malarial region. He was told that a very pleasant excursion was to go to Riverside and paddle in a canoe. He went by train, arriving about five o'clock, paddled a mile or two up the river, and took a swim. He did not duck his head under water. He came back, went to an apartment-hotel on Commonwealth Avenue, and had two days later a distinct malarial chill. I waited forty-eight hours, and he had another. A few doses of quinine stopped it. The man went away and lived in another place, and has never had anything of the sort since.

living on the sandhill from which the Riverside track as in the syphilis the testicle is always affected. These

these cases, in view of the history of so many other is made to form the circuit line; and in several instances in that vicinity - all of them associated with boating on the river or residence near the river - I have observed cases of ordinary illnesses in which there seemed to be a distinct malarial tincturing, that is, an occurrence of chills with recurrent fever not following any special type; and in one or two cases there was growth, decaying vegetation and swampy land? It evident remission with mild chills, reminding one of would seem as if the reason we have been so free from the presence of a malarial element. One case in particular simulated true malarial fever, in which there was no other complicating disease, and which subsided under quinine.

DR. F. C. SHATTUCK: How common is it to see the organism escape from the corpuscle?

Dr. COUNCILMAN: One can see it escape from the blood-corpuscle during the beginning of the chill almost at any time; usually a little time before or in the very first part of the chill one can see the whole process of segmentation take place under the micro-

DR. SHATTUCK: I should like to say a word about the virulence of the infection which characterized Dr. Cutler's first case — the symptoms were so severe and so rebellious to quinine, and the case is so sharply contrasted with one which remains deeply impressed in my memory because it was the first case in which I saw the plasmodium and the first case, I think, in which the organism was seen in Boston. The case was one of Panama fever, under my care some eight fected localities may perhaps blow particles of soil for | years ago. The man was extremely pale, with malashort distances, thus affording an entrance to our rial cachexia. It was the year Dr. Councilman published his paper on the plasmodium; and I was so much interested in this opportunity to observe the organism that I let the man's chills run longer than I should have done otherwise in order to study his more cases than we have had would have occurred and blood. I waited as long as I dared; and yet one large dose of quinine practically cured him, causing total disappearance of the plasmodia. Dr. Cutler's man comes from New Orleans, and dies in spite of the best care and remedies.

> Dr. Councilman: Quinine will have very little effect on the crescentic organisms, but the intracorpuscular forms yield quickly to quinine.

PATHOLOGICAL SPECIMENS.

Dr. Councilman: These specimens are rather interesting as showing as unusual degree of syphilitic infection. They come from a man who died at the City Hospital from facial erysipelas and erysipelas of the head. The man was exceedingly low when he came to the hospital, and died from the general syphilitic infection. I have quite a number of the organs which show the syphilitic lesions, and some of them show extremely unusual lesions. At autopsies, if we suspect a case of visceral syphilis, we look first at the testicles, because if there is any visceral syphilis the chance is almost sure that we will find it in the testicles. I have always thought that the testicle is the most frequently affected of any organ. The disease appears in the testicle in the two well-known forms, both as a general and rather diffuse formation of connective tissue, and as the true gumma. The epididymis is very rarely if at all affected; the syphilis is always in that way sharply distinguished from tuberculosis, because in tuberculosis the epididymis is always Dr. Blodgett: I am glad Dr. Cutler alluded to affected and the testicle very rarely except as an exthe particular locality of Riverside. I have a relative tension of the tuberculosis from the epididymis, where-

are the two testicles of the individual; and in one of them particularly — it does not show so well after being in alcohol — there will be found numerous true gummatous masses. This small portion is the testicle and there are gummatous masses all through it. In the other testicle there was the more diffuse form. If we have a tuberculosis of the epididymis we almost always have extension of the disease up along the cord, and we may have tuberculosis of the seminal vesicles, of the prostate, or in some cases tuberculosis of the bladder. In this case there was no syphilis of the cord at all. The cord, so far as one could see, was free from any syphilitic lesions; but, on the other hand, here is a decided syphilitic affection of the seminal vesicle. The right seminal vesicle is enormously enlarged, and in the right seminal vesicle are these true gummatous masses scattered all through it and extending down into the prostate, so that there is a true syphilis - a true formation of gummata in the seminal vesicle on the right side. Of course, in cases of tuberculosis of the epididymis extending upwards, we would expect almost to have a tuberculosis of the kidney as well; although we cannot suppose that syphilis extends in the same way, still there is a perfectly well defined syphilis of the kidney here in the shape of a perfectly circumscribed gumma. The liver shows the syphilitic lesions perfectly. The liver was greatly enlarged; and in various places throughout the liver perfectly characteristic caseous masses are to be seen. We notice also the marked amyloid infiltration. I do not think the distribution of the amyloid substance is as marked immediately in the vicinity of the gummatous material as elsewhere. What makes the case exceedingly interesting is that there was a syphilis of the lung also. In the right lung there were numerous true gummata. At the edge of the posterior border is a circumscribed, more or less caseous mass with indurated lung tissue around it. The first idea would be to consider it as a tuberculosis of the lung, but it is not tuberculosis. In the fresh state the appearance of the caseous material in the centre of the gumma was essentially different from that presented by the tubercle. These masses were located in that part of the lung where we have syphilis, that is, on the posterior border of the lung and in the lower portion. That is a perfectly true gumma of the lung, and that induration of the lung which we find around that central caseous spot is an interstitial pneumonia which we find accompanying syphilis. There was no syphilis of the heart, no lesion of the heart. There is a well-marked endarteritis of the aorta, but I do not think there is anything at all to connect that with syphilis. The man was thirty years old, and there is no reason why he should not have had that due to something else. The case is an interesting one on account of the enormous extent of the syphilis. There was general amyloid and an enormous extension of the syphilis. It is particularly interesting to find syphilis of the seminal vesicles, because that appears to have been overlooked. I have not gone thoroughly over the subject; but as far as I have been able to look it up, I have not found any text-book which makes any reference to syphilis of the seminal vesicles. With regard to the lung, it is interesting to see the seat of the lesion in syphilis as compared with tuberculosis. In these two diseases, which would be most often confounded, we have an entire difference in the

not affected. The part of the lung which is affected in syphilis, that is, as far as we can find out from the few cases of syphilis of the lung which have been reported, is the posterior border of the lower portion the part of the lung ordinarily most free from tuberculosis, and in that portion of lung there is apparently no tendency for the material to break down. I think that syphilis of the lung is not so extremely rare; but I should think a syphilitic phthisis would be an exceedingly rare condition, because the syphilis, unlike tuberculosis, shows no tendency at all to break down. The necrotic tissue in the syphilis is not made up of cells alone, as in tubercle, but of fibrous tissue. undergo metamorphosis into the fibrous tissue; and that fibrous tissue, even when necrotic, is much more permanent than the masses of dead cells which we find in tubercle. The case had not been under treatment in the hospital. The man came in, and died at the end of twenty-four hours.

DR. A. P. CHADBOURN read a paper on

THE CLINICAL USE OF MALAKIN.

He presented a short summary of an article by Jacquet reporting about seventy-five cases in which the drug was used, and added an account of his own experience in a single case.

DR. SHATTUCK: There are some cases of neuralgia so inveterate that it is important to have as long a list of agents as possible, because we need them all sometimes.

DR. BLODGETT: I saw an allusion to the drug Dr. Chadbourn has been giving, in which it was stated that the dose was a drachm three times a day. I am glad he has called attention to the possibility of toxic action from its use in large quantity. The administration of a drachm at once would liberate far more energy than the administration of half-drachm doses at short intervals, and might be the means of averting serious or even dangerous symptoms in patients possessing a peculiar idiosyncrasy to drugs, or unusual susceptibility to this particular drug.

THE AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

Eighth Annual Meeting, Washington, D. C., May 29, 30, 31 and June 1, 1894.

(Concluded from No. 9, p. 221.)

INFLAMMATION OF THE SEMINAL VESICLES.

DR. ROBERT W. TAYLOR, of New York, read a paper with this title.

there is no reason why he should not have had that due to something else. The case is an interesting one on account of the enormous extent of the syphilis. There was general amyloid and an enormous extension of the syphilis. It is particularly interesting to find syphilis of the seminal vesicles, because that appears to have been overlooked. I have not gone thoroughly over the subject; but as far as I have been able to look it up, I have not found any text-book which makes any reference to syphilis of the seminal vesicles. With regard to the lung, it is interesting to see the seat of the lesion in syphilis as compared with tuberculosis. In these two diseases, which would be most often confounded, we have an entire difference in the distribution of the lesion. In syphilis the apices are

neck of the bladder or the perineum. There is marked increased frequency in urination and tenesmus, sometimes mild, again quite decided, and in some cases very severe. As the bladder fills the painful symptoms increase in severity, and there may be pain at the end and sometimes at the root of the penis. There may be fever, chills and malaise. All these symptoms may be present in posterior urethritis, so that the crucial test in diagnosis is palpation of the prostate and seminal vesicles by means of the finger in the rectum. If the case is one of acute posterior urethritis, the prostate will be tender, even painful on pressure, and perhaps swollen. If seminal vesiculitie is present and explored for early, one or both vesicles will be found to be much enlarged in all directions in the shape of a distended leech, hot, brawny, and exquisitely tender. Defecation is very painful and perhaps complicated with rectal tenesmus, and may be attended with vesical spasms; sleep is heavy and unrefreshing; and often during the night painful erections, perhaps bloody, may add to the patient's sufferings. In a few days the swelling may still further increase, and then moderate fluctuations may be felt.

The chronic form of seminal vesiculitis may result from the non-occurrence of resolution in the acute affection, and in this form the clinical history is tolerably clear and striking. But in the majority of cases it begins as a low grade inflammatory process, in persons particularly of neurotic type, who may suffer from chronic or sub-acute posterior urethritis or chronic prostatitis, and confirmed masturbators, and in those

given to excessive venery and alcoholics.

In the acute form of this trouble resolution usually takes place. In the chronic form amelioration and cure may be obtained. In some cases, however, the morbid process goes on to the formation of large tu-

mors, which require operative interference.

When recognized in the acute stage, seminal vesiculitis is to be treated on the general principles which govern the management of all phlegmasiæ of the genital and urinary organs. A good plan is to apply a large number of leeches upon the perineum and the margin of the anus. Injections of cold water may be used, and the rectum may be packed with ice if the procedure is pleasant to the patient. Opium in suppositories, diluents and saline cathartics may be administered as required. Should an abscess form, it may be reached by means of a long incision in the perineum, just anterior to the anus. The resulting cavity should be treated on general surgical principles. When the abscess is not large, but well defined, it may be aspirated through the rectum. In more acute and extensive abecesses, free incision through the rectal wall, followed by careful antiseptic packing, has been

In the treatment of chronic seminal vesiculitis, in which we may find distended, pouchy vesicles, much stress has recently been laid by Dr. E. Fuller upon what he terms stripping or milking the vesicles with the finger-tip, which is inserted in the rectum. Dr. Taylor said it was no easy matter in many cases to reach the vesicles with the finger, and to clearly define their size and shape. Moreover, the seminal vesicles are made up of blind-ended tubes or diverticula; and for anatomical reasons it will be clearly seen that the utmost that can be accomplished by stripping or milking a vesicle is to act upon about one-quarter of its whole

ampullation of the vas deferens, which is commonly near the prostate, has often been mistaken for enlargement of the seminal vesicles.

DR. GARDNER W. ALLEN said that in the cases of seminal vesiculitis coming under his observation, the symptoms were not characteristic, and a diagnosis could only be made by a rectal examination. In these cases he thought he had succeeded in reducing the size of the organs by pressure with the finger-tip exerted through the rectum.

DR. MARTIN expressed the opinion that in comparatively few cases of epididymitis was there any evidence of swelling of the seminal vesicles. In healthy men he had not been able to locate the vesicles at all.

Dr. George E. Brewer, of New York, mentioned frequent ejaculation on very slight provocation as a symptom of chronic vesiculitis. In spite of Dr. Taylor's demonstration, he thought it possible to express some of the contents of these over-distended sacs by pressure through the rectum.

DR. JAMES R HAYDEN, of New York, said that his attempts at milking or stripping the seminal vesicles

had proved very unsatisfactory.

Dr. Bangs referred to the difficulty he had had in outlining the seminal vesicles, excepting in chronic cases. In some instances, by making pressure through the rectum, he had been able to express a fluid which contained spermatic elements; whether this came from the ampullated part of the vas or from the vesicles themselves he did not know.

DR. ROBERT F. WEIR, of New York, described the method of opening abscesses of the seminal vesicles through the perineum. He stated that in a number of instances he had removed the vesicles for tubercular disease, together with the testis and vas deferens.

Dr. Belfield called attention to the fact that the sinus pocularis, when distended, forms a swelling in the region of the seminal vesicles.

Dr. Bryson said that chronic inflammation of the vesicles might be mistaken for tubercular inflamma-

DR. TAYLOR, in closing the discussion, said that when the seminal vesicles were inflamed and distended, severe pressure in that region was apt to produce rupture of their walls. In the majority of cases it was probably the ampulla that was manipulated through the rectum, and not the vesicles themselves

THE QUESTION OF SURGICAL INTERFERENCE IN TU-BERCULOUS KIDNEY.

DR. JOHN P. BRYSON, of St. Louis, read a paper on this subject. The author stated that of 174 cases observed by him sufficiently to justify the positive diagnosis of tubercular disease of the urinary organs, only eighteen gave unmistakable evidences of involvement of the kidneys. This statement is, of course, intended to apply only to cases of surgical as distinguished from the more generalized tuberculosis known as miliary. Surgical interference in tuberculous disease of the kidneys has been recommended (1) to clear up the diagnosis and remove possible stone; (2) to free sloughing portions of the renal substance; (3) to drain the renal pelvis and avoid the infection of the lower urinary passages by diverting the stream of tuberculous urine by the loin; (4) splitting the capsule to avoid extensive sloughing in cases where the onset is sudden and large portions of the organ are threatstructure. The author said he had no doubt that the ened; and (5) nephrectomy in cases where the kidney

Digitized by

is sufficiently disorganized by "strumous" disease to be no longer useful as an excretory organ, and but threatens the general health.

The complexity of the problem of surgical tuberculosis, the fact that experiment is not an adequate substitute for experience, and the knowledge that here we are dealing with organs so essential to the maintenance of life, render it impossible to study these propositions otherwise than by trial; that is to say, by the light of what has actually been done clinically, and the results that have been thus obtained. The researches of Morris and others show that in a little more than one-half the cases examined, both kidneys were diseased, though not to the same extent. This fact is sufficient to warn against any serious interference with the diseased or gan, excepting in cases of urgent necessity. Not only may the second kidney be diseased, but it may be absent, or other tuberculous foci may exist elsewhere in the body, which, though "latent," are ready to become active sources of infection at any moment. The author stated that merely draining a tuberculous cavity in any part of the body had not proved a satisfactory procedure in his hands, even where the drainage was complete, or combined with washing and the application of antiseptics. If we could reason by analogy from similar conditions of the testis, splitting the capsule in those cases of sudden onset, with rapid swelling, in order to prevent considerable destruction of gland-tissue, was not so effective as rest, combined with emollient and anodyne local applications. In one case of this kind coming under Dr. Bryson's observation, in which the capsule of the kidney was split, the patient died in a fortnight from general tuberculosis. Where the symptoms of stone were fairly clear, an operation for its removal seemed to be justifiable; but the danger of lighting a chronic into an acute renal tuberculosis was too great to justify an operation for the purpose of clearing up a doubtful diagnosis, when intelligent and patient watching would surely, in the great majority of cases, solve the problem. To remove a stone; to open an abscess that is not adequately draining by the ureter, and thus relieve fever and wasting suppuration; to free sloughing portions of the kidney, and thus prevent infection of the pelvis and peri-renal tissues; and, when we can satisfy ourselves reasonably well of the adequacy of the opposite kidney, to remove a kidney that is disorganized and causing wasting by suppuration, seem to be plain surgical duties; but to remove, or even to incise and drain any portion of a kidney with the object of removing a focus that is likely to infect the body, was not, in the writer's opinion, a justifiable proceeding.

Dr. Bangs said that after a good deal of experimentation in this class of cases, he had come to the conclusion that good hygiene was the chief, if not the only factor in the cure of tuberculosis.

Dr. Keyes expressed the opinion that in these cases the surgeon should either stand aside, or else play the physician, and only operate when emergency demands

DR. BELFIELD said he thoroughly believed in noninterference in tuberculosis of the genito-urinary organs.

Dr. Bell said that in cases where the tubercular lesions were limited to the bladder and prostatic region, he had had very satisfactory results from opening the bladder above the pubes, and then instituting prolonged drainage after cauterizing the diseased areas.

tive as regards the use of instruments in tuberculous patients.

Dr. Bryson then closed the discussion.

A CASE OF CYSTITIS AND PYONEPHROSIS DUE TO COLON BACILLUS, REQUIRING NEPHRECTOMY,

by Dr. F. TILDEN BROWN, of New York.

The patient was a male, aged forty, who in 1888 was treated for cystitis. Upon leaving the hospital, the symptoms of cystitis were replaced by those of pyelitis or pyelonephritis; in this condition he continued for some years, during which time he steadily grew worse. On his re-admission to the hospital in January, 1894, there was pain and resistance on palpation on the left side, and well up under the border of the ribs an indurated mass could be felt. In February, 1894, an operation was undertaken, and on exposing the left kidney it was found to consist of a large, thin-walled sacculated bag, filled with fluid. Nephrectomy was accordingly done and the patient made a good recovery. In the course of the operation the renal artery was ruptured, producing alarming hemorrhage.

Cultures made from a sinus of the removed kidney yielded a pure growth of colon bacillus. Cultures of the urine drawn by sterilized catheter, six weeks after the operation and again three months after the operation, also yielded pure cultures of the same bacillus.

In conclusion, Dr. Brown said that the title of this report was purposely made assertive as regards its etiology, rather with the intent to elicit discussion upon the importance or non-importance of the bacillus coli communis as a pathogenic agent in urinary diseases, than because this particular case afforded unusual facilities for positive deductions.

FOURTH DAY. - FRIDAY.

Dr. R. W. TAYLOR exhibited a colored drawing showing

A MIXED MALIGNANT GROWTH OF THE TESTIS.

Dr. Bryson said that tumors in the region of the testis or cord were seldom typical; they were apt to be composed of mixed elements; and in the treatment of these cases radical measures were usually indicated.

Dr. Bangs said that in one case of carcinoma of the testis coming under his observation, the inguinal glands were not removed and two years later there was a recurrence of the disease in the kidney on the affected side; the inguinal glands were not involved.

Dr. Bryson said that in one case of sarcoma of the testis there was a recurrence of the disease in the intra-abdominal glands. The inguinal glands escaped.

Dr. Keyes said that in a number of these mixed growths of the testis coming under his observation, the recurrence in each instance was in the retro-peritoneal glands.

TWO CASES OF SYPHILIS THAT HAVE A BEARING ON THE QUESTION OF THE PERIOD DURING WHICH THE DISEASE IS COMMUNICABLE,

by Dr. James Bell, of Montreal.

(1) A case of transmission of syphilis from the male two years after the disappearance of all lesions. The patient presented himself some years ago with a wellmarked and characteristic primary sore, followed by typical skin, glandular and throat symptoms. He was Dr. Chismore said he had become very conserva- at once placed on specific treatment; and this was

faithfully continued for over two years, at which time the man had no further evidences of the disease. Two years and eight months after the disappearance of the initial lesion, the man was married; and about two months later his wife, who was in every respect above suspicion, developed unmistakable symptoms of syphilis. Dr. Bell said he regarded this case as one of blood inoculation.

(2) Conception occurring during the period of incubation of the chancre in the male parent, the product being a perfectly healthy non-syphilitic child. The patient was a male who exposed himself to inoculation in the latter part of October, 1891. Four days afterwards he was married. In January, 1892, he presented himself with a large, indurated chancre, and fully developed secondary symptoms. His wife had ceased to menstruate one week before marriage, and had not menstruated since. She showed other signs of pregnancy and her child was born about the middle of August, 1892. Conception must therefore have occurred during the interval which elapsed between the inoculation and the appearance of the chancre. woman was at once made aware of the grave condition of affairs by her husband, and was put on specific treatment. She remained in good health, and was delivered at full term of a fine, healthy child. Up to the present time neither the mother nor child have shown any signs of syphilis.

DR. TAYLOR said in the first case reported, there was possibly some extra genital source of infection. The woman may have been infected by some other member of the family. In one case coming under his observation a servant was the source of infection; in another, a child. Or the infectious period of the disease may have persisted for an unusually long time. The blood is the least potent agent in the infection of syphilis. Dr. Taylor said he regarded the second

case reported as fortuitous simply.

Dr. Judkins referred to a case coming under his observation in which the man married four months after the appearance of the initial lesion. Two months later the patient's wife showed unmistakable symptoms of syphilis, and since then she has aborted five times.

Dr. Keyes said that in the case reported the man married twenty-eight months after the appearance of the chancre. Clearly, he was not yet out of the high-road of possible infection, no matter what the treatment was.

Dr. Bangs said he had arrived at the conclusion that it was not safe to permit marriages in these cases until after several years have elapsed.

The following officers were elected for the ensuing year: President, Dr. L. Bolton Bangs, of New York; Vice-President, Dr. Francis S. Watson, of Boston; Secretary and Treasurer, Dr. W. K. Otis, of New York; Member of Council at Large, Dr. J. A. Fordyce, of New York.

I: was decided to hold the next meeting of the Association at the Clifton House, Niagara Falls, during the last week in May, 1895.

THE CZAR'S INTEREST IN MEDICAL PROGRESS.—The Czar of Russia, who has from the first shown great interest in having the next International Medical Congress meet in Russia, has signified his intention of contributing fifty thousand rubles toward the expenses of the meeting.

Recent Literature.

Pain in its Neuro-pathological, Diagnostic, Medicolegal, and Neuro therapeutic Relations. By J. LEON-ARD CORNING, A.M., M.D. 12mo, pp. 328, with twenty-one illustrations. Philadelphia: J. B. Lippincott Company. 1894.

The first part of this work contains a hasty and imperfect review of the various morbid conditions which may give rise to pain, - a section, which, as it contains nothing new, seems to have no special reason for existence. The second part is devoted to the various methods of treating these conditions and of relieving pain. In these chapters considerable space is given to the various methods of local medication proposed by the author at various times; the local medication of the peripheral nerves and of the cord, and the methods of aiding the action of drugs by jugular compression and by compressed air. The latter method is claimed to be of special benefit with intra-cranial pain, and in cerebral difficulties of a functional character in which pain, exhaustion, insomnia, or depression are leading features. Full details are given for the use of these methods, and the more familiar methods of dealing with painful affections are also discussed.

Essentials of Practice of Medicine. Arranged in the form of Questious and Answers. Prepared especially for students of medicine. By Henry Morris, M.D., etc. With a very complete Appendix on the Examination of Urine, by Lawrence Wolff, M.D. Third edition, revised and enlarged by Three Hundred Essential Formulæ collected and arranged by WILLIAM M. POWELL, M.D. Philadelphia: W. B. Saunders. 1894.

This book forms a double number of Saunders's Question Compends, Nos. 8 and 9. In general, its aim is well carried out. The book is small and compact. Forty-eight additional pages of "essential formulæ" increase its size, and probably its popularity, rather than its essential value. The same space might better be used in the body of the book, in the revision of which "great care has been exercised not to increase the size." As the claim is made that the very latest physical diagnosis is given, some reference to the amebic form should be found under the head of dysentery.

The Healing of Rodent Cancer by Electricity. By J. INGLIS-PARSONS, M.D. London: John Bale & Sons. 1893.

This little book of eighty-two pages contains an account of the author's method of dealing with rodent ulcer, or rodent cancer, as many English authors prefer to call it. He claims for electricity several advantages, namely, absence of pain and hemorrhage, less destruction of tissue and a smaller cicatrix.

In the cases reported, the patients were anesthetized at each application. The results were very satisfactory. This is, however, generally the case when the treatment is persistently and conscientiously carried out by patient and doctor. There is, on the other hand, no disease which produces more frightful deformity if neglected. In the early stages excision is always practicable, and is far the more radical and rapid method of treatment. In the later stages there should be no hesitation about a free sacrifice of tissue, as it is only in this way that the disease can be arrested in its progress. We fear that a general adoption of Dr. Parsons's method would lead to inefficient work.

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THE HYPODERMIC INJECTION OF MERCURI-ALS IN THE TREATMENT OF SYPHILIS.

At the last meeting of the French Congress of Dermatology and Syphilography, held at Lyons, August 2d and 4th and reported in L'Union Medicale August 18th, M. Augagneur read an exhaustive report on the hypodermic use of mercury in the treatment of syphilis. He took a decidedly adverse view of its general use, stating that the indications for employing it were very hard to determine. From his large experience and thorough investigation of the subject he had come to the following conclusions:

- (1) The use of mercury by hypodermic medication in the treatment of syphilis should be reserved for a few exceptional cases, because of the inconvenience and dangers to which it exposes the patient. In this connection he emphasizes the great pain of the injections, the dangers of abscess formations, of sudden deaths from syncope, fat embolism and rapid mercurial intoxication.
- (2) It should be used only after careful deliberation in cases where it is needful to have large doses of mercury absorbed immediately, mainly in cases of cerebral syphilis.

If this urgency for rapid absorption does not exist, the method of treatment should always be by inunction or pills, one or both.

In the discussion which followed this paper the opinion of the Congress seemed about equally divided for and against M. Augagneur's extreme views. M. Staukowenkow, of Kiew, strongly defended the use of soluble mercurials hypodermically. He had used the following formula in 200,000 cases and always with success. Its action was sure and rapid, and he had never seen a serious accident. His preparation, invariably used, is:

Of this he injects two grammes each day for a month; then waits two months, and again gives same treatment, continuing it at longer intervals.

M. Jullien also defended the hypodermic method. He used it in all grave and stationary lesions. He considered local abscess formation rare, if the asepsis was rigid.

The sentiment of the Congress in closing the discussion was that, while the hypodermic method was not to be advised for general use, it, nevertheless, was an invaluable aid in hospital practice and in grave cases, and that the accidents emphasized in M. Augagneur's report might, in the majority of cases, be avoided by care and rigid asepsis.

RED CLOVER.

One of the fads of the present day is clover extract, a somewhat expensive preparation made from the trifolium pratense. "It has," according to the advertisements in the daily papers, a "great and growing reputation as a blood-purifier, and as a specific for cancers." The number of individuals whose "cancers" are said to have been aborted or dispersed by clover tea is legion. It is not only good for "cancers," but for other morbid productions, even "carbuncle" and "scrofula."

It is needless to say that no medicinal principle has yet been obtained from the trifolium. We shall expect next to see an extract from the potato or turnip vaunted for cancer or syphilis! There is, by the way, still a belief in certain localities that the tomato is a cause of cancerous growths!

It is hard to account for the repute that clover has acquired among the laity of this country as a remedy for cancer. In many parts of New England, we know it to be almost impossible for a person to have a suspicious growth of any kind without being urged to take clover and the urging is persistent. In a certain neighborhood near Boston, one woman, afflicted with growing scirrhus, is said to have consumed in extracts and infusions of red clover the product of a ten-acre lot; but without saving her life. The fact that the cancers do not disappear, despite the free use of the antidote, appears to detract in no measure from the sale or use of the preparation.

There is no sound basis for the reputation which red clover has acquired, and the only persons who have ever derived any advantage from the use of clover in cancer, furuncle, or various "humors," are the venders of certain extracts, fluid and solid, which are in growing demand. It is to the credit of Mrs. Grant that during General Grant's last sickness she was wise enough to throw away the thousand and one nostrums containing clover which were sent.

Another of these absurd remedies is colory — apium graveolens. This vegetable has obtained a repute as a nerve sedative, and there is an increasing sale of various preparations that bear its name. It not only "quiets the nerves" and "restores sleep," but it has

"a marked tonic and invigorating effect on the female generative organs," if we may credit the advertisements. It is true that apium petroselerium (parsley) has diuretic properties, and as such has a place in the materia medica. The medical profession would welcome a safe and good nerve sedative, especially if it were adapted to dysmenorrhea and similar affections, and would be glad to obtain proof that celery has such remedial virtues; but thus far its therapeutic status is on a par with that of the over-rated sarsaparilla. Nor do we need to add that there is no greater therapeutic desideratum than a remedy that will antagonize that "pernicious proliferation of embryonal epithelium" known as cancer, and physicians everywhere would bail with delight any clinical evidence that we have such a remedy in clover.

WOMAN AND THE BICYCLE.

SHOULD we encourage women to ride bicycles or should we discourage them from it? This question is one which is so often asked by patients that the opinion of an eminent physician of Paris, who has published a small treatise on the subject, may be of interest, although his conclusions after discussing the pros and cons and describing in detail first women and then bicycles, are about the same as those arrived at by other students of this subject. In order to form an accurate opinion we must first find the age, the weight of the woman, whether she can ride without falling off, what kind of clothes she means to wear, what condition her digestion is in, and any other facts which we consider essential. The bicycle requires a certain amount of muscular exertion. It is better, therefore, to warn our patients not to take more muscular exercise than their strength warrants. A woman who is young, quick, not too clumsy nor fat, may indulge more freely and ride longer distances than one who has not these advantages. More good is derived from the bicycle if the exercise is taken regularly and according to ordinary laws governing athletic exercises, and if the distances travelled are not too long and the clothing inappropriate. It is found that the dauger of accidents is much diminished by riding on good roads which are little frequented and avoiding rough places or crowded streets.

A very important consideration is the appearance presented to the public by the bicycle rider of the gentler sex. Her self-possession and general feeling of well-being are much improved by an appropriate and becoming dress and by the ease and grace of her carriage. The details of the dress and the relative merits of different styles would require too much space for the limits of a medical essay and more knowledge than the male mind is capable of acquiring, but as a general rule it should be insisted upon that corsets ahould be discarded if it can be done without prejudice to the fit of the dress. In comparing a woman riding a bicycle to one riding a horse in Amazon fashion, that is, in a man's saddle, great injustice is done to the

bicycle rider. The author considers that the Amazon seat is absolutely vicious, but no such epithet could with justice be applied to the proper seat on the bicycle. Women of a certain temperament should be cautioned that the riding of a bicycle may be the first step leading towards a sportive life. Such cases have been recorded, although not fully enough for us to judge of the ultimate results. A wise and proper use of the bicycle as a means of recreation has been followed by good results in the case of a number of women; on the other hand, an appreciable amount of harm has been done to other members of the sex by riding too much or by discontinuing the ride too suddenly or in badly chosen localities.

From this it will be seen that a request from a patient for the medical opinion of the value of bicycle riding for women should not be given without careful consideration of each individual case, and that no definite rule can be laid down which will cover all contingencies.

MEDICAL NOTES.

THE CHOLERA. — It is reported that cholera of a terribly virulent type is raging in Russian Poland. The medical authorities are unable to cope with the disease, owing to the fact that the inhabitants conceal their sick and treat them in their own way. The chief centres of the disease are Pinczow, Miechow, Stopnica and Dzialcszyce, where the inhabitants are camping in the woods. In Galicia, September 1st, there were 200 cases of cholera and 95 deaths from the disease. In Bukowina there were 14 cases and 10 deaths.

SMALL-POX IN NEW JERSEY. — In consequence of the prevalence of small-pox, the Common Council of Newark, N. J., at the request of Health-Officer Lehlbach, has appropriated the sum of \$20,000 to combat the disease.

SMALL-POX QUARANTINE IN MILWAUKEE. — The Milwaukee Board of Health in the past week has been powerless to enforce the law in regard to the quarantining of small-pox cases. Mobs of Poles and Germans have the infected portion of the city under complete control, and thousands of people have been recklessly exposed to contagion. The State Board of Health will probably call out the State troops to enforce the law.

DEATHS FROM CHLOROFORM. — Since August 10th there have been three deaths from chloroform anesthesia in London hospitals.

MONUMENT TO CHARCOT. — Earnest measures are being taken by prominent men in the profession in France and Germany to secure funds for the establishment of a fitting monument to Charcot in Paris.

DEDICATION OF THE STATUE OF CLAUDE BERNARD. — The statue of Claude Bernard at Lyons will be dedicated October 26th. Prominent members of the Academy of Sciences in France will take part in the ceremonies.

FOSSIL MICROBES. - At the meeting of the French Academy of Sciences on August 6th, Renault and Bertrand reported their bacteriological discoveries in fossil remains. In examining the fossil remains of the Permian epoch they constantly found a considerable quantity of microbes of different forms, mainly diplococci and streptococci. In every case these resembled the actual bacteria as we know them.

CATGUT DRAINAGE-TUBE. - M. Desguin, of Antwerp, at the last meeting of the Society of Surgery of Belgium, showed some drainage-tubes made by interlacing long, large threads of catgut, forming tubes of different dimensions. He was able to obtain sterilization by heat or chemicals without altering. They are less rigid than decalcified bone tubes, absorbable and porous, and constitute ideal drainage-tubes.

THE NEXT INTERNATIONAL MEDICAL CONGRESS. - Dr. Idelson has suggested to the Committee charged with the arrangements for the next International Medical Congress, which is to be held at Moscow in 1896, the advisability of organizing a group of "volunteer guides," consisting of young medical practitioners and students having a good knowledge of foreign languages, whose duty it should be to interpret for the foreign members, and generally look after the comfort of visitors.

THE AMERICAN ACADEMY OF MEDICINE. - The American Academy of Medicine held its annual meeting at Jefferson, N. H., last week. The following officers were elected: President, J. McFadden Gaston of Atlanta; Vice Presidents, Rufus P. Lincoln of New York, William T. Smith of Hanover, Helen C. Putnam of Providence, Victor C. Vaughan of Ann Arbor; Secretary and Treasurer, Charles McIntyre of Easton, Pa.; Assistant Secretary, Edgar M. Green of Easton, Pa.; Member of Council, Charles C. Bombaugh of Baltimore. The next meeting will be held in Baltimore, May 4, 1895.

AMERICAN CATTLE QUARANTINED BY BELGIUM. - The United States minister in Brussels states that an order of the Belgium government subjects all American cattle to forty-five days' quarantine. An exception is made of cattle en route before August 29th, but this only on condition that they be killed at the public slaughter house on arrival. Dr. Salmon, chief of the bureau of animal industry, referring to this quarantine, said: "We are building up quite a trade in cattle with Belgium, a line of cattle ships having been established between New York and Antwerp. This order, if carried out, will destroy this trade. The alleged cause of these restrictions is the sickness of some cattle recently landed from the United States, which some wiseacre has pronounced to be contagious pleuro-pneumonia. The cattle in question were part of a shipment sent from Kentucky, and none of them could possibly have been subjected to infection."

International Congress of Applied Chemis-TRY. - The International Congress of Applied Chemistry took place at Brussels and Antwerp from August BOARD OF HEALTH. - Application has been made

4th to the 11th. More than 400 chemists, representing all civilized governments and a large number of scientific societies throughout the world, took part in the proceedings. Important resolutions were passed as to the unification of methods of analysis and the prevention of adulteration of food. The Congress also adopted the French litre in preference to the German (Mohr's litre) as the standard for gauging purposes and for the graduation of chemical instruments. The Centigrade thermometer was adopted to the exclusion of those of Reaumur and Fahrenheit. It was decided that the next meeting of the Congress should be held in Paris in 1896.

Women Doctors in America. - According to a statistical report drawn up by M. Louis Frank, of Brussels, there were in 1893 on this side of the Atlantic fully 2,000 women practising medicine in one or other of its forms and inclusive of 130 homeopathists. The majority were ordinary practitioners, but among the remainder were 70 hospital physicians or surgeons; 95 professors in the schools; 610 specialists for the diseases of women; 70 alienists; 65 orthopedists; 40 oculists and aurists; and finally 30 electro-therapeutists. In Canada there is but one medical school exclusively devoted to the training of medical ladies, but in the United States in 1893 there were ten, one of them being a homeopathic establishment.

FRENCHWOMEN AND THE MEDICAL PROFESSION. - According to the Progrès Médicale, the medical profession does not seem to have much attraction for Frenchwomen. Of 165 female students registered in the Paris Medical Faculty at the beginning of the present academic year, only 16 were French. On the other hand, of a total of 164 female students in the Faculty of Letters, 141 were French. There were 7 French female students in the Faculty of Science, and 3 in that of Law.

PROFESSIONAL SECRECY IN BELGIUM. - The Gazette Médicale de Paris states that a judicial decision given in Brussels is to the effect that a physician is never obliged, except in cases where the law expressly orders to the contrary, to reveal secrets confided to him in his professional capacity, even if the person who intrusted them to him consents to their being laid before a court.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, September 5, 1894, there were reported to the Board of Health of Boston, the following numbers of cases of acute infectious disease: diphtheria 29, scarlet fever 25, measles 3, typhoid fever 38.

WORK OF THE BOSTON FLOWER MISSION. -Nearly 18,000 bouquets have been sent to the sick in hospitals during the summer. The work will be continued through September.

A STEAM DISINFECTOR FOR THE CAMBRIDGE

by the Cambridge Board of Health to the City Council for a portable steam disinfector, and the matter has been referred to the committee on health. The disinfector is to be used for the disinfecting of the clothes of persons who have been ill with contagious diseases. The board desires to purchase a disinfector which is used extensively in England, but very little in this country. It is mounted on wheels and easily transported from place to place. The machine will cost \$1,400, and its appurtenances \$725 more. It is estimated that it would cost \$960 a year to operate the machine, exclusive of the care and feed of horses.

PHARMACIST'S FAIR.—Some time during next May the pharmacists of the United States will hold a fair in Mechanic's Building. The exhibition will include the various articles used as medicines, curious chemical specimens and ingenious apparatus. The fine exhibit of Harvard at the World's Fair will be included in the list. The leading manufacturing chemists of the country have promised to participate. Special days will be devoted to nurses, physicians and associations of various kinds.

Miscellanp.

THE STERILIZATION OF BREAD.

At the meeting of the British Medical Association on August 3d, the investigations of Mr. Walsh, of London, and Dr. Waldo, of Southwark, as to whether interesting discussion.

Mr. Walsh read a paper based on a large series of experiments. Its main conclusion was that baking does not necessarily destroy the vitality of micro-organisms contained in dough. With regard to temperature, they had found that the average maximum temperature in the centre of a large loaf varies from 163.4° to 186° F., and in a small loaf from 186.8° to 203° F. As the heat increases steadily in the centre of the loaf, any organisms present are exposed for a short time only to the maximum temperature reached. The average micro-organism will withstand a prolonged exposure to a much higher temperature without being destroyed. Spores are much more resistant again, so that on theoretical grounds alone, having ascertained the maximum temperatures in the centre of the loaf during baking to be those mentioned, they might venture to predict that organisms (or their spores) would not be destroyed by the process of baking. By the method of plate cultivations they succeeded in obtaining thirteen different species of micro-organisms from the centre of recently baked (a few hours after baking) loaves. The latter were obtained from bakeries in different parts of London, rich and poor. Numerous experiments were carried out for them by Mr. Walter Severn on sixty-two loaves. It was clearly shown, if the results were trustworthy, that certain non-pathogenic organisms are able to survive the pro-

By analogy Mr. Walsh reasoned that pathogenic organisms (or their germs) may also survive the ordeal of the baker's oven. Numerous experiments with

not ready for publication. If bacteria (or their spores) may retain their vitality in the freshly-baked loaf, this fact would at once place the regulation of bakehouses on a different footing. Sewage pollution of such a place would mean that bread might be sent out to consumers charged with specific organisms. In conclusion, he said that there is no particular reason why the origin of many mysterious septic invasions of the human body may not eventually be traced to the agency of bread. A generation ago milk was not suspected of spreading disease. At any rate, the subject seems well worthy the attention of those who are interested in the scientific development of preventive medicine.

Continuing the study of the question, Mr. George Brown, of London, said that he had been under the impression for years that it was to the bread-supply of the public they must look for the causation of many cases of outbreak of disease, especially sporadic out-breaks of intestinal disease. He had met with many cases of choleraic diarrhea and troubles of that kind where, after investigating every probable cause, he had come to the conclusion the bread was at fault. He found it was of inferior quality, mouldy, doughy, tenacious, and disagreeable to the taste. Pursuing the question further as to what the bread was composed of, he came to the conclusion to put medical officers of health and sanitary officers on the track for finding out means by which very improper food was distributed among the poorer classes of the community, and that was the use of flour which had been kept in warehouses and stores, often damp and very unfit for the storage of food. Wheat would keep in the grain, unless exposed to unfavorable conditions, for many years, baking sterilizes a loaf of bread, were the subject of an but flour began to deteriorate after two or three days, and that went on. Often it was taken from barrels, and had to cut with a hatchet, and could only be used by mixing it with other flour. It was almost invaria-bly crowded with organisms, vegetable and animal, and it was well known billstickers would not use the flour - they would have fresh-ground flour. Yet it was used in poor neighborhoods. Officers of health should be given power to visit warehouses to examine the flour before it got into the bakers' shops.

STOMATITIS NEUROTICA CHRONICA.

AT the last meeting of the Society of American Physicians in Washington, Dr. A. Jacobi recorded three cases of a peculiar and rare form of stomatitis, to which he has given the name "stomatitis neurotica chronica." Very few similar cases have been reported. In severe generalized urticaria of the surface of the skin the author has often met with an edematous swelling of the mucous membrane in the mouth. Herpes febrilis, when severe on the lips and chin, often spreads over the tongue and cheeks, exhibiting the same character in all localities and following the course of the peripheral branch of the trifacial nerve. Pemphigus occurs on the skin almost exclusively, not on the mucous membrane. With the exception of a few cases collected by the author, literature fails to disclose but very few in which pemphigus was limited to the mucous membrane of the oral cavity. The great scarcity of pemphigus on the mucous membrane of the mouth has induced Dr. Jacobi to arrange them under pathogenic organisms have been made, but the results are a special heading. There is no doubt that the cases

were all of a neurotic character. The temperature of the body was always normal. As distinguished from herpes, which heals readily unless maltreated, pemphigus of the mouth is of long standing and heals only slowly, giving rise to a great deal of protracted pain and discomfort. Blisters appear suddenly of about the size of peas. These soon break, forming whitish ulcers with considerable pain and slightly indurated base, which heal very slowly and tend to recur in different parts of the mouth.

GUNJA-SMOKING AND THE "PUKHYS."

AT a recent meeting of the Calcutta Medical Society, Dr. K. C. Bose read a paper upon the native use of Indian hemp, in which he gave many interesting details of the social and historical uses of the drug.

"There are three forms in which hemp is prepared for use, Bhang, Gunja and Churus. However wild the plant may grow, its leaves and stems will always yield the narcotic element, and no cultivation is needed to produce Bhang, which is prepared from the dried mature leaves of the plant, and whose intoxicating power depends on the nature of the soil on which it grows. Much labor and special culture are required to grow Gunja and Churus. Gunja is the aggluminated female flowers carefully prepared by special process; while Churus is the resinous matter extracted from leaves, stems and flowers. Gunja is only cultivated in the district of Rajshahye and in the following manner: A moist but not shady site is selected, and the land (cleared of all weeds) is ploughed from four to ten times, and then thoroughly manured. This is generally done about the middle of March. After the rains have fairly set in, the ploughing is again repeated, and the seeds are sown during the early autumn.

"When the plants grow to a definite height they are trimmed. They flower in November, and come to maturity about the beginning of January. Gardeners go round the field and take out all the male flowers, for their presence is supposed to deteriorate the quality

of the drug.

"Amongst the Jains the habit of taking Bhang is almost universal, but such is not the case with the people of Rajpootana and north-western provinces. The youngsters contract the habit of taking Bhang as a beverage from a comparatively tender age, and when they come of age they generally discontinue the habit and take to opium; whilst the still junior members chew Bhang with betel leaves (pan) simply to escape detection. Some take Bhang in the form of infusion; others prefer it in the form of decoction, and only a limited number take it in the shape of a bolus or pills. Out of five hundred men, three hundred would use it in the form of an infusion, one hundred in the form of decoction, and one hundred in pill form.

"Gunja and Churus are generally smoked by a low class of men, such as the kahars, boatmen, menial servants, jogees and sanyasis for the object of pleasure or relief from pain. The habit of Gunja-smoking has of late been contracted by the juvenile members of some respectable houses in Burra Bazar, and measures have now been taken to prevent its spread. The Gunjasmokers, in preparing their smoking stuff devise diother class. Reckless smokers would simply make a Bengali poet of some renown."

their stuff poisonous by adding dhatura and opium to it. Luckily, however, the number of such smokers is only small. I would, with your permission, venture to describe the ingredients of two of the worst forms of formulæ now being in vogue among the respectable and well-to-do class of smokers. The one is known by the name of panchoratno or the five jewels; the other novoratno or the nine jewels. The former is made up of round Gunja thirty grains, Bhang one drachm, Churus fifteen grains, opium seven and onehalf grains and Dhatura seed five grains. These agents are beaten up to the consistency of a paste and then put into a chillum, and smoked by a batch of five to their hearts' content. The latter, which is still more poisonous, contains all these ingredients, plus one grain of white arsenic, five grains of nutmeg, two grains of the milky juice of akund (asclepias gigantia), and twenty grains of the dried leaves of tobacco, mixed up and smoked by five men in a ponchomookee chillum specially prepared for the purpose. The arrangement of a ponchomookee chillum is quite usual. Five chillums made either of clay or brass are placed in a group and five separate bent tubes sufficiently long are attached to their lower ends; five men sit in a circle and smoke simultaneously. The success of such a procedure depends entirely on the quickness with which the hilarity is produced. Before smoking the parties repeat the following mantras to achieve success: 'O Rudra, we salute you! O Shiva, we pay you reverence! O Ishwara, O Sarva, O Bhadra, O Giver of all blessings, we salute your different forms and humbly ask your gracious help in rendering our smoke joyous and successful! O Omnipotent, shower your maledictions upon those who are our opponents and who work against us!' Gunja is sometimes, though very rarely, chewed by men."

In the discussion following the paper Dr. Ahmed

related the following curious story:

"Some years ago there existed in Boseparah, in the Northern Division of the town, a society of some of the first-rate Gunja smokers of Calcutta. They used to hold their meetings in a hut, the roof of which was thatched with Gunja, the walls matted with sticks of hemp plants, and the floor made of tobacco (tobacco leaves mixed with treacle). Here the members met every day, smoked Gunja, and discussed on various interesting subjects of their own mould and imaginative production, and sung many a comic song of their own liberal composition to their hearts' content. No one was admitted as a member of this association unless he could smoke at least twenty-five chillums of Gunja every day. Every member of this society was called a 'Pukhy' (a bird of paradise). There were distinctions amongst these birds. Those that could smoke one hundred chillums of Gunja a day were called 'Bool-Bools.' The smokers of fifty chillums were given the titles of 'Chataras' and those of twenty chillums were distinguised as 'Toontoonies.' often the members of this notorious club of Calcutta competed amongst themselves with regard to the proficiency of their smoking Gunja. They all started smoking together at once and at the same time, and whoever smoked his chillums out first was pronounced to beat the others. He used to be awarded with a prize which consisted of a well-burnt clay brick to sit verse kinds of formulæ, and the formula of one class upon. This Gunja association is not in existence now, of people will not correspond with the formula of an- but two of its members are still living, one of whom is

THE NATURE OF INFLUENZA.

FOR the "Address in Medicine," at the recent annual meeting of the British Medical Association, Dr. Stewart summarizes the knowledge of influenza gained by the epidemics of recent years. So many parts of the body may be profoundly affected, and the sequelæ following the disease are so variable, that one is inclined to doubt whether so many processes can be referred to a single cause; but all of these sequelæ and complications have been proved to stand related to the influenza invasion. The essential cause of the disease the author considers unquestionably to be Pfeiffer's The constitutional symptoms result indirectly from the growth of this micro-organism. The bacteria are found living, active, numerous in the blood and throughout the tissues generally, and the character of the symptoms corresponds to those due to poisoning by products of growth. These poisonous products act upon the nerve and other tissues, producing a great variety of structural changes which are met with in the later stages of the influenza process. The presence of the bacillus, or of its products, decreases the normal resisting power of the body to other micro-organisms, allowing, for instance, the entrance of pathogenic cocci into the lung. It has only recently been believed that the disease could be considered contagious. Investigation has in many instances proved that what appeared to be spontaneous outbreaks were clearly traceable to infection. The period of incubation is very short; sometimes the symptoms appear almost immediately after exposure. alone explains the rapid advance of the disease in a community. Direct intercourse between the sick and the sound appears not to be essential. The bacillus seems to be capable of affecting the human subject only, and cannot multiply outside the human body at ordinary temperatures. It cannot resist drying, and the most careful search has failed to find evidence of any spore formation. The disease spreads equally well in cold and in warm weather.

Deaths reported 1,852: under five years of age 833; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 497, diphtheria and croup 94, scarlet fever 44, typhoid fever 22, when the first provided in the control of the control well in cold and in warm weather.

For prevention of the disease these facts would indicate that isolation of those affected is the only rational measure. Every sneeze and every cough probably scatters the germs through the atmosphere. Much good may be done by the destruction of sputum and nasal secretion. Outside of the body the bacillus is not a hard one to kill.

METEOROLOGICAL RECORD,

For the week ending August 25th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:-

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O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., amoky; R., rain; T., threating; N., mow. † Indicates trace of rainfall.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, AUGUST 25, 1894.

Retimated population. Reported deaths in each. Deaths under diseases. Consumptions Consumption. Diarrhosal diseases. Scarlet fever.	Diphtheria mod
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Amesbury 10,920 8 4 25.00 - 25.00 -	-

whooping-cough 18, measies 5, erysipeias 3, cerebro-spinal meningitis 2.

From typhoid fever New York 7, Brooklyn 6, Boston 2, Cincinnati, Nashville, Lowell, Cambridge, Salem, North Adams and Clinton 1 each. From whooping-cough Brooklyn 5, New York 4, Worcester and Cambridge 3 each, Boston 2, Fall River 1.

From measies Brooklyn 3, New York 2. From erysipeias New York and Brooklyn 1 each. From cerebro-spinal meningitis New York 2.

In the thirty-three greater towns of England and Wales with

New York 2.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending August 11th, the death-rate was 17.6. Deaths reported 3,527: acute diseases of the respiratory organs (London) 161, diarrheal diseases 441, measles 81, diphtheria 81, whooping-cough 67, scarlet fever 39, fever 30, small-pox (London 10, Plymouth, Birmingham and Manchester 1 each) 13.

The death-rate ranged from 9.8 in Croydon to 29.2 in Liverpool; Birmingham 22.2, Bradford 13.7, Bristol 12.0, Gateshead 15.6, Hull 14.0, Leeds 17.4, Lelcester 16.0, London 17.4, Manchester 21.8, Newcastle-on-Tyne 17.6, Nottingham 16.6, Plymouth 11.9, Portsmouth 16.5, Preston 25.3, Sheffield 20.3, Sunderland 22.2, Swansea 10.9, West Ham 17.7, Wolverhampton 21.5.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 25, 1894, TO AUGUST 31, 1894.

MAJOR JOHN D. HALL, surgeon, upon the arrival of MAJOR J. C. MERRILL, surgeon, at Fort Sherman, Idaho, will be relieved, and report for duty at Madison Barracks, N. Y., relieving Major Daniel G. Caldwell, surgeon.

MAJOR CALDWELL, on being thus relieved, will report for duty at St. Francis Barracks, Florida, relieving CAPTAIN JEE-FERSON R. KEAN, assistant surgeon.

CAPTAIN KEAN, on being thus relieved, is ordered to Key West Barracks, Florida, for duty.

CAPTAIN LOUIS A. LAGARDE, assistant surgeon, relieved

from duty as attending surgeon and examiner of recruits, Head-quarters, Department of the Colorado, and ordered to Fort quarters, Departi Logan, Colorado.

Leave of absence for one month, to take effect when relieved from duty at St. Francis Barracks, Florida, is granted Captain Jefferson R. Kean, assistant surgeon.

MAJOR LOUIS M. MAUS, surgeon, U. S. Army. Fort Sam Houston, Texas, granted one month's leave of absence.

FIRST LIEUTENANT FREDERICK P. REYNOLDS, assistant surgeon, U. S. Army, U. S. Military Academy, West Point, N. Y., granted thirty days' leave of absence.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U.S. NAVY FOR THE WEEK ENDING SEPTEM-BER 1, 1894.

Assistant Surgeons C. D. BROWNELL, ROBERT BOYD, and E. R. PIGOTT, ordered to examination for promotion.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FIVE WEEKS ENDING AUGUST 25, 1894.

BAILHACHE, P. H., surgeon. Granted leave of absence for five days. August 3, 1894.

Hamilton, J. B., surgeon. Granted leave of absence for five days. August 16, 1894.

SAWTELLE, H. W., surgeon. Granted leave of absence for five days. August 12, 1894.

GASSAWAY, J. M , surgeon. Granted leave of absence for two days. August 11th, 1894.

STONER, G. W., surgeon. Granted leave of absence for seven days. July 28, 1894.

IBWIN FAIRFAX, surgeon. To proceed to Brussels, Belgium, for special duty. July 24, 1894. To Rotterdam, Netherlands. July 27, 1894. To proceed to Hull, Liverpool and other English ports on special duty. August 9, 1894.

MRAD, F. W., surgeon. Granted leave of absence for thirty days. August 4, 1894.

Banks, C. E., passed assistant surgeon. To proceed to Halifax, N. S, for special duty. August 16, 1894.

GLENNAN, A. H., passed assistant surgeon. Granted leave of absence for six days. August 14, 1894.

Brooks, S. D., passed assistant surgeon. To proceed to Duluth, Minn., and Superior, Wis., as inspector. July 24, 1894. To proceed to

WHITE, J. H., passed assistant surgeon. Relieved from duty at Savannah, Ga., and ordered to report to the medical officer in command of the Service at New York, N. Y., for duty. August 6, 1894.

CARRINGTON, P. M, passed assistant surgeon. To proceed to Evansville, Ind., for duty. August 6, 1894.

KINYOUN, J. J., passed assistant surgeon. To proceed to Buda Pesth, Austria, to represent Department at International Congress of Hygiene and Demography. August 14, 1894.

VAUGHAN, G. T., passed assistant surgeon. Granted leave of

Wertenbaker, C. P. To report at Bureau for instructions. August 4, 1894. To proceed to Cape Charles Quarantine for temporary duty. August 7, 1894. To proceed to Delaware Breakwater Quarantine for duty. August 20, 1894.

GARDNER, C. H., assistant surgeon. Granted leave of absence for fifteen days. August 18, 1894.

NORMAN, SEATON, assistant surgeon. To proceed to Baltimore, Md., for duty. August 6, 1894.

SPRAGUE, E. K., assistant surgeon. To inspect unserviceable property at St. Louis, Mo. July 26, 1894.

PROMOTION.

HOUGHTON, E. R., assistant surgeon. Commissioned as passed assistant surgeon. July 20, 1894.

AMERICAN PUBLIC HEALTH ASSOCIATION.

The American Public Health Association will convene at the

The American Public Health Association will convene at the city of Montreal, Canada, Tuesday, September 25th, at 9 o'clock A. M., and continue four days.

The following topics have been selected for consideration at this meeting: (1) The Pollution of Water-Supplies. (2) The Disposal of Garbage and Refuse. (3) Animal Diseases and Animal Food. (4) The Nomenclature of Diseases and Forms of Statistics. (5) Protective Inoculations in Infectious Diseases. (6) National Health Legislation. (7) The Cause and Prevention of Diphtheria. (8) Causes and Prevention of Infant Mortality. (9) The Restriction and Prevention of Tuberculosis. (10) Car Sanitation. (11) The Prevention of the Spread of Yellow Fever.

Upon all of the above subjects special committees have been appointed; therefore all papers upon these topics should be presented to the appropriate committee in season to be incorporated as a part of the report of the committee, if deemed advisable.

visable.

The Executive Committee announces the following additional subjects upon which papers are invited: (12) On the Education of the Young in the Principles of Hygiene. (13) Private Destruction of Household Garbage and Refuse. (14) Disinfection of Dwellings after Infectious Diseases. (15) Inspection of School Children with Reference to the Eyesight. Papers will be received on miscellaneous sanitary and hygienic subjects, but preference will be given to the topics announced above.

All persons who purpose to present papers at the next meeting of the Association, will be governed by the following By-Laws of the Executive Committee:

"4. All papers presented to the Association must be either printed, typewritten, or in plain bandwriting, and be in the hands of the Secretary at least twenty days prior to the annual meeting, to insure their critical examination as to their fulfilling the requirements of the Association.

"5. If any paper is too late for critical examination, said paper may be so far passed upon by the Executive Committee.

paper may be so far passed upon by the Executive Committee as to allow its reading, but such paper shall be subject to publication or non-publication as the Executive Committee deem

reaction or non-publication as the Executive Committee deem expedient.

"6. All papers accepted by the Association, whether read in full, by abstract, by title, or filed, shall be delivered to the Secretary as soon as thus disposed of, as the exclusive property of the Association. Any paper presented to this Association and accepted by it shall be refused publication in the transactions of the Association if it be published, in whole or in part, by permission or assent of its author in any manner, prior to the publication of the volume of transactions unless written con-

by permission or assent of its author in any manner, prior to the publication of the volume of transactions, unless written consent is obtained from the Publication Committee.

"7. Day papers shall be limited to twenty minutes, and evening papers to thirty minutes, each."

Invitations extended to individuals to prepare papers for the Association do not imply their acceptance by the committee, merit alone determining that question.

All persons attending the meeting should obtain a standard certificate of the agent of whom they purchase their ticket, certifying that they have bought a ticket to Montreal and over what lines they will travel, which certificate must be countersigned by the Secretary of this Association at Montreal, in order to secure the reduction for the return trip.

All communications relating to local matters should be ad-

All communications relating to local matters should be addressed to Dr. Elzéar Pelletier, Secretary of the Local Committee of Arrangements, No. 76 St. Gabriel Street, Montreal, Can.

The meetings of the Association are open to the public. All persons, of whatever profession or occupation, interested in the work of the Association, are cordially invited to be present. Ladies are especially invited to attend the evening meetings.

IRVING A. WATSON, Secretary, Concord, N. H.

AMERICAN MEDICAL ASSOCIATION.

THE Secretaries of the Medical Societies of the United States are earnestly requested to send the undersigned the following: Name of society; officers, with post-office address; time and place of meeting.

WM. B. ATKINSON, M.D., Permanent Secretary. 1400 Pine Street, Philadelphia.

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the Medical Society of the State of California, Session of 1894.

Medical Tuberculosis. By Hugh Hamilton, M.Sc., M.D., of Harrisburg. Reprint.

Practical Application of the Principles of Sterilization. By Hunter Robb, M.D., Baltimore. Reprint. 1894.

The Contagious Aspect of Pulmonary Tuberculosis. By A. M. Cooper, M.D., of Point Pleasant, Va. Reprint.

La Femme et la Bicyclette. Par le Dr. Just Championnière, Chirurgien de l'hôpital Saint Louis. Paris. 1894.

Bulletin of the Psychological Section of the Medico-Legal Society. Published quarterly by Clark Bell, Esq.

The Significance of Albuminuric Retinitis in Pregnancy. By Robert L. Randolph, M.D., of Baltimore. Reprint. 1894.

A Treatise on Diphtheria. By Dr. H. Bourges. Translated by E. P. Hurd, M.D. Published in Physician's Leisure Library Series. 1894.

A Contribution to the Study of the Solvent Action of Piperazine on Uric Acid. By John Gordon, M.D., of Aberdeen. Reprint. 1894.

A Handbook of Obstetric Nursing. By Francis W. U. Haultain, M.D., F.R.C.P., Edinburgh, and James Haig Ferguson, M.D., F.R.C.P., Edinburgh. Second edition. Lippincott & Co.

Original Articles.

SOME METEOROLOGICAL DATA.1

SAMUEL A. PISK, A.M., M.D., DENVER, COL.

At the last annual meeting of this Association a committee, of whom I am one, was appointed to collect meteorological data of the resorts in this country and report to this body. With a view to carry out the wishes of the Association, in regard to the Colorado climate at least, I have had compiled from the statistics of the United States Weather Bureau a series of tables which will, I trust, convey some information, both by means of comparison and directly, with reference to the nature of the Colorado climate. I have selected eighteen stations scattered all over the United States, chosen with the object of their illustrating the climate of some of our larger centres and of our resorts as well, and aiming to further illustrate the climatic conditions of the various portions of our country.

Yable I. Theteorological Walk for Inn Jeans Compiled at the Denver Weather Bureau Office.

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Stations	Şlevat	mean	Relation	Sales	mean	mean	Prevail	Quelane Idailly W	blear	Brothy	Cloudy
Augusta	196	29923	14	4.54	45.26	64	ne	92	132	134	9
Pollon	1.126	29.885	.72	2.76	41.19	48	w	270	118	143	9
hicago.		29270	73	266	35,10	48	SW	234	108	143	11
Denvet	\$287	24744	52	1.89	18.33	49.	S	169	150	164	5
l Para	3796	26,245	44	238	8.60	63	M	140	217	115	3.
t Grant ariz	48/2	26226	43	2,38	16.66	60	N	.163	207	113	4
acksonville	1.43	30.050	78.	5.76	53,96	69	NE	149	119	152	9
sos angeles	330	22634	72		19.54	62	w	119	178	139	4
uno york		29865	73	3.08	46.83	52	MU	23/	107	156	10
lympia	44	29.994	81		46.80	50	S	79	102	111	15
hiladelphia	117	29.948	7/		40,45	54	no	232	113	139	11
orland Ore.	118	29.955	76	3.31		53	mes	123	110	118	13
alt Bake bill	4346	25,643	04	22/	16.00	52	mi	121	153	130	8
an antonio		29258	68	4.86	30.46	68	36	175	114	148	10
lan Diego	93	29919	76		12.28	61	w	132	162	138	6.
anta Fe	7042	23293	48		12.97	49	NE.	165	186	133	4
t. Paul		29.116	74	220	24.72	43	ned	166	95	165	10.
vashington		19963		331	48.22	54	MU	138	//8	142	100

note st ground Baromelar Mean for q years only; San antonio, means for 1985 for 10 months only, Santa Fe, all means for grans only.

Augusta, Ga., in these tables, has been chosen because of its being the nearest signal station to Aiken, S. C., which is, I believe, some seventeen miles distant. Fort Grant (Arizona) has been chosen to illustrate the climate of that region in the main table, because the signal station was there until its removal, a year or two ago, to Tucson. While I shall use the tables mainly to illustrate the Colorado climate, they nevertheless will serve to demonstrate very well the climates of the several portions of our country, and being compiled as they are from United States weather bureau statistics and by an officer in its employ, they are worthy of the highest credence. (See Table I.)

ELEVATION. — A glance at the columns giving the elevations shows that Denver is a fair example of a high altitude resort, so far, at least, as its climatic conditions are concerned. Situated as it is just one mile above sea-level, it must necessarily have a lighter barometric pressure and those accompaniments of climate that are coincident with high elevations. So far as altitude is concerned, it will be seen that Denver is about 1,800 feet lower than Santa Fé; that it is about 1,500 feet higher than El Paso and some 2,800 feet above Tucson. It must, therefore, fairly stand as a type of a high altitude resort; and by "Denver" I mean that portion of the eastern slope of the Rocky Mountains contained within the State of Colorado.

DRYNESS OF THE AIR. — In addition to the element of altitude must be added that of dryness of its air. This is very well shown by the columns of the mean relative humidity and the mean absolute humidity in grains of vapor, which means, together with others given in Table No. I, are the means of ten years of observations. In these columns it will be seen that both as regards the relative and absolute humidity of its air Denver stands in the fore front. While in its relative humidity it does not rank quite as high as El Paso, Fort Grant or Santa Fé, it is, in common with them, greatly drier than the other resorts, including San Antonio and San Diego, and immensely drier than the centres from which most of our phthisical patients come.

A glance at the table of absolute humidity, by which I mean the actual number of grains of vapor contained in a cubic foot of air, will show that Denver is outranked only by Santa Fé, and should not be mentioned in the same class with Jacksonville, Augusta, Los Angeles, San Antonio or San Diego, which have moist climates.

PRECIPITATION. — So far we have two prominent characteristics illustrated by this table, namely, elevation and atmospheric dryness. To these must be added a small amount of precipitation, by which I mean rain and snow. The mean for ten years gives Denver but 15.83 inches, which is but about a third of that in Augusta, some 38½ inches less than the rainand snow-falls of Jacksonville, Fla., half that of San Antonio and greatly under the rainfalls of the larger cities of the East, though it is somewhat in excess of the rain-and snow-fall of El Paso, San Diego and Santa Fé. We must, therefore, add this peculiarity of a small amount of rain- and snow-fall to the other climatic conditions of elevation and dryness as factors to be regarded as favorable to the cure of the phthisical condition.

TEMPERATURE. — When we come to the question of the mean temperature, the table shows that Denver must be classed amongst the cool climates. The mean for St. Paul shows an average of 6 degrees lower temperature than Denver, while Denver ranks 14 degrees below El Paso, 11 degrees lower than Fort Grant, 20 degrees lower than Jacksonville, 15 degrees lower than Augusta, 13 degrees lower than Los Angeles, 19 degrees lower than San Antonio, 12 degrees lower than San Diego, exactly the same as Santa Fé, and about that of Boston and New York. To the qualities of elevation, atmospheric dryness and small amount of precipitation must be added that of a cool climate.

WINDS. — The table shows that the prevailing direction of the wind is from the south, which is a particularly mild wind, coming as it does over a long stretch of dry land with the nearest water of any consequence, the Gulf of Mexico, some 900 miles away.

The table showing the average daily velocity of the wind will probably be a surprise to most readers, as Colorado, somewhat unjustly, has acquired the reputation of being subject to frequent and disagreeable winds. This table, it must be borne in mind, gives an average for ten years; and it is to be relied upon, because if there is any one department in the weather service in which observations have been accurately recorded, it is this one of wind velocity. This table shows that the average daily velocity in Denver is considerably greater than that of Augusta and Olympia (Washington); that it is somewhat in excess of the

 $^{^1}$ Read before the American Climatological Association, Washington, D. C., June 1, 1894.

daily velocity in Portland, Salt Lake City, Los Angeles, San Diego, El Paso and Washington, D. C.; that it ranks along with St. Paul, Santa Fé and Fort Grant; that it is under San Antonio; that it is greatly under Philadelphia and New York; that the daily average is 85 miles less than that of Chicago and 101 miles less than that of Boston. From this it will be clearly seen that Denver is in no way - and by "Denver" I mean the country for which it stands — entitled to the epithet "windy," and that on the contrary the daily

Jable II. Seasonal meteorological Data - 1892.

		Rela	tivek	bumi	dity	a	bsolu	teku	mide	ty.
Stations.	Urra Leve	Spring	Submande	Quitingen	Change	Jenn Law	Springs	Juna	Quilland	Custage
augusta	76	67	79	75	75	256	395	774	H38	438
Boston	73	61	71	73	74	1.36	205	5.76	3.08	2.66
Chicago	83	75	76	71	76	1.30	2.38	5.76	2.86	2.64
Denver	60	54	45	45	51	0.96	1,48	3.08	1.74	1.6
El Paso	47	.33	32	39	36	1.48	0.92	2.76	205	1.67
backsonville	78	.70	82	82	. 78	3,68	4.86	8.25	5.95	0.3
Bosangeley	71	45	74	71.	72	3.08	3.68	4.86	395	3.81
new York	74	69	74	70	73	1.54	2.47	6.36	3.19	29
Dershipia	90	77	70.	821	80	256	297	3.95	3.68	3.1
Philadelphia	72	66	71	71	70	1.54	2,47	6.58	3.31	3,0
Gotland, Ore.	86	74	64	84	77	247	308	3.95	3.8!	3.3
Salt Bake Bity	79	61	38	47	56	1.48	238	297	205	21
San antonio	62	57	64	63	61	2.66	4.23	7.02	4.70	43
San Diego	73	1.77	78	.74	.76	3.43	4.09	5.20	4.54	4.3
Santa Fl	59	1.40	33	40	43	1.04	119	197	1.48	14.
Shoane	.79	72	71	41	73	0.84	1.94	5,20	2.56	22
Lucson	37	.39	31	36	41.	1.97	1.97	3.31	247	2.4
washington	74	68	75	71	72	1.54	276	7.02	3.31	3/4

note Elevation of Lucton, arizona, 2432 feet

motion of the wind is much less than prevails in our large cities from which most of our patients come. This point I hope to illustrate further on. We may then add to the other characteristics of elevation, dryness, small amount of precipitation, cool climate and prevailing mild wind that of only a moderate daily motion of the wind.

CLEAR DAYS. — We next come to a consideration of the number of clear, fair and cloudy days in a year; and here again it must be borne in mind that the table is a mean for ten years, and so can be considered to give a fair average. By the term "clear" in this connection is meant a sky that is absolutely free from clouds, or only three-tenths clouded. A fair sky is

of US and it	Joa	re P	resip	itali	ion	nus	nber	of blo	udy L	gay
Stations	Litalia	Spains	Symmetry	Bulling	Poor.	Brown Law	Spring	Salara and S	Quitamen	A STORE
augusta					39.24		21	24	15.	9
Boston					37.02		27.	26	28	.114
chicago	5/9				36.56		39	17	25	13
Demos	247				15.02		24	17	8	5
El Paso					5.32		4	3	.8	2
Jacksonville	7,28	221	14.38	18.02	41.89	1.37	23	141	37.	13
Los angeles					18.72	26	20	. /	11	. 55
new fork	8.52	11.28	9.32	9.78	38.90	143	1.28	21	21	11.
Olympia	1400	10.20	2173	1948	4941	-54	50	31	39	17
Philadelphia	7.53	11147	7.69	8.07	34.78	41	38	29	19	12
Portland Ore	13.96	9.21	12:28	8.13	33.58	47	28	18.	34.	.12
Salt Bake Bity	4.64	1.5.76	1.26	2.42	14.08	45	41	7.	15	1.10
San antonio	6.38		1996			29	17	1/2	15	7
San Diego	5.23	2.57	0/8	1.16	9.09		23	1/2	16.	7
Santa Fe			3.98		11.62	7	9	3	10	25
St. Paul	1.99				32.55	32	141	24	24	12
Lucson					9.6/		14	20	9	6
washington					42.34		3/	12	22	10

one that is from four-tenths to seven-tenths clouded. A clouded sky is one that is from eight-tenths to tentenths obscured by clouds. These statistics are based on frequent observations from sunrise to sunset. The figures show that El Paso and Fort Grant greatly outnumber Denver in the number of clear days, averaging the one 67 and the other 57 more absolutely clear days in a year than Denver. Los Angeles shows a preponderance over Denver of 28 absolutely clear days, San Diego of 12 and Santa Fé of 36. Salt Lake City

less, Jacksonville 31, San Antonio 36 and St. Paul 55 less. As compared with Boston and Washington, D. C., Denver has an excess of 32 clear days. She has 43 more clear days than New York and 42 more than Chicago. Perhaps the point will be more clearly illustrated by considering the absolutely cloudy days, for these are the days on which it is not possible for the invalid to go out at all. Here we find a preponderance in favor of El Paso of 18 days and of Fort Grant 6 days, Los Angeles 8 days, and Santa Fé 5 days in a

Season	nal mel		Alle		ata	- 18	92-				
-			ily Vot	_		Helmber of Days with Gat (40 miles per Rour or over)					
Stations	Transland .	COM PS	- Same Park	Quilden's	Jon.	Aprin Car	Birne S.	Sand of the last	Cualinger	400	
augusta	127	118	67	115	108	ō.	0.	0.	1	1	
Chicago	295	326	324	401	403	1/2	28	0	12	59	
Denvel El Paso	149	200	173	180	178	0	1	13	1	3	
Jacksonville.	187	194	168	163	178	. 1	0.	0	0	1	
bos angeles new fork	302	293	192	254	259	3	1	1	0	6	
Olympia Philadelphia	274	259	209	133	245	0	0	0	0	5	
Portland Ore.	130	/37	144	168	144	0	/	. 0	1	2	
an antonio	173	233	156	144	175	. 0 .	. 0		0	. 0	
Santa Fe	161	2/8	187	193	185	0	2	0	. 1	3	
St. Paul.	168	190	146	180	180	0	2	5	1	4	
washington	187	194.	127	156	166	0	3	0	0	3	

year; but, as compared with Jacksonville and Augusta, Denver leads by 43 and 48 days. She has only half the number of cloudy days that New York, Chicago, St. Paul and Washington are blessed with, and 62 less absolutely cloudy days than hang over Philadelphia. We may then add this element of an open sky, as a climatic condition favorable to the phthisical invalid, to those other favorable conditions, which we have seen to exist in Denver, namely, elevation, atmospheric dryness, a small annual precipitation, a cool climate, a mild prevailing wind and of only moderate velocity.

By SEASONS. - The study of the main table has given us some positive ideas about the nature of the Colorado climate, both regarded by itself and as seen by comparison with other climates. It would be of great value to study it more closely with reference to the seasons and to see how far the general conclusions are borne out when applied to the seasons, more especially the spring, autumn and winter months, when an invalid should be away from his home. With this in view I have had additional tables compiled for the year 1892, the most recent year wtih regard to which the data are published; and I shall also introduce other tables that I have previously published in other articles to help illustrate the subject.

SEASONAL DRYNESS. — The elevation, of course, is a constant factor. The barometric variation is so nearly constant as to cut but a small figure in the main question. We will now look to a consideration of the seasonal relative and absolute humidity (Table 2). By comparison, we see that the average relative humidity and the average absolute humidity for the year 1892 is about the same as the mean obtained in our first table, which shows that the year 1892 was a fair one to select with regard to these two points. Our table shows that while there was a slight increase in the relative humidity for the winter months, there was an absolute diminution. The spring and autumn months were approximated to the average. A closer study of the table shows that Denver maintains about the same position, seasonally, with reference to the other sta is only 3 days in excess of Denver, Augusta 18 days tions under consideration that she did when taking the

range of ten years. It is not worth while to go over this ground again. The tables on this and other points are worthy of careful investigation, but a detailed accounting would be tedious. (See Table III.)

SEASONAL PRECIPITATIONS. — It is of very great importance to determine the amount of precipitation (rain- and snow-fall) seasonally, as it, together with temperature and sunshine, determines largely the patient's ability to lead an out-of-door life. The earlier consideration showed us the very small amount of rainand snow-fall, on the average, to which Denver is subjected. Here, again, the comparison with the main table indicates that the year 1892 was an average one. Looking over the column for the winter months, it is interesting to note that Denver's total precipitation of 2.47 inches is virtually the same as that of El Paso, about .5 inch in excess of that of St. Paul, about 6 inches less than that of New York, 5.4 inches less than Boston, 6.8 inches less than that of Los Angeles, and about 10 inches less than that of Washington. The spring and autumn months have a larger amount of precipitation, but even here we find it much less than that of any of the centres from which our invalid population comes. It must further be borne in mind that the character of the soil along the eastern slope of the Rocky Mountains is sandy and porous and that any moisture that falls is rapidly absorbed, so that virtually the invalid is not incommoded to any very great extent by the question of snow- and rain-fall.

SEASONAL TEMPERATURE. — The question of temperature should be studied carefully, for in this respect, as well as with reference to the character and velocity of our winds, there has been a widespread misunderstanding. It is a well understood fact that elevation, coupled with dryness, are factors favorable to diathermancy, and it is to be expected that that condition would exist in Denver. Our climate has been severely criticised for its extremes of temperature, and I myself will acknowledge to having seen a variation in twentyfour hours of eighty degrees. I have seen, though rarely, a registration at night in midwinter of 18° below zero and at noon the next day of 62°. It behooves us, therefore, to investigate somewhat more closely with reference to the question of temperature, if we desire to obtain a fairer understanding of the subject. It should go without saying that the temper-

atures that concern the invalid are those of the hours of sunshine, for these are the hours in which he is out-of-doors, and the remainder of the day he should be indoors, where he can easily regulate the temper-

Denver Bola mea months aptimber. 754746 61.1 641 533 499 325 268

ature to suit his individual case. So, then, we may fnirly, it seems to me, eliminate the night temperatures and see how it is with reference to the temperatures by day.

In the years of 1884 and 1885, the local observer took observations at 9.08 A. M., 1.08 and 5.08 P. M.; and I introduce a table (Table V) giving the means of these several observations for the eight months, from September to April inclusive. The table shows conclusively that Denver, when regarded seasonally, must come under the head of a cool climate. If we take the one o'clock observation, however, as a fair representative of the temperature for the invalid, we will be of great interest to investigate more closely with

see that at no time is it so low as to preclude living out-of-doors. The temperatures given here are air temperatures, and are the readings of the thermometer placed in a shelter-box on the top of one of our highest buildings; the registrations are, therefore, likely to be somewhat lower than the temperature closer to the ground, and are very different from the temperature that one feels when exposed directly to the sun's rays. This question of diathermancy plays a very important rôle in this respect. One has simply to have experience to know the great difference between the temperature of the sun and that of the shade in Colorado. So marked is this that one intuitively seeks the shady side of the street in summer, and the sunny side in winter. Table VI illustrates this point very clearly. The solar temperature was taken by a blackened-bulb thermometer in vacuo and exposed to the direct rays The table shows the solar temperature, of the sun. the air temperature, and the difference between the two at the one o'clock observation for the twelve months of the year 1886. One is appalled at reading the differences, ranging from 54.7° to 67°. For instance, with a solar radiation of 92.5° at one o'clock in January, we find an air temperature of 27.3°, or a dif-

	ble VI ner, b uponali	olo	Opm
/886	Solor	out.	Sidenado
	1465	528 743 751 852 815 720 642 413	58.8 670 57.1 61.3 62.2 62.3 55.3 58.7

maloja.	John	Denser-100 pm John
November 1882 December 1883 January, 1884, February, 1884 average	3 //3 3 89 /05 /08	1000mbor 1886, 100.0 Decembor 1886, 100.2 January, 1886, 1925 February, 1886, 100.3 Querdec - 92.3

Donasij Gola Ho	igh lounds	18 mile per hours	14)-18
January		Sup.	
February	5	Duful	
march	4.7-0	Saltimber	
april	.17 1	October	
May	12	roomber	1
Suice	0	December	I

ference of 65.2°. In July, we find an average solar radiation at one o'clock of 146.5° and an average air temperature of 85.2°, or an actual difference of 61.3°, and in November a solar radiation of 100° and an air temperature of 41.3°, or an actual difference of 58.7°.

In an article published some years ago by Prof. Edward Franklin, F.R.S., he laid great stress upon this element of solar radiation as being valuable to the high altitude resorts of the Engadine. He called attention to the fact that "even with a much lower thermometer the air, if still, feels warmer at an elevated station than in lower and denser regions of the atmosphere"; and that further, "the sun's rays are far more powerful at greater than at lower elevations, and their intensity is much more equable throughout the day." Experience shows that in midwinter, during the hours of sunshine, we can sit with open doors and windows, and it is a common thing for the invalid to plan picnics and excursions without regard to the cold — all due to this element of solar radiation. I remember distinctly having vaccinated a man, who sat in his shirt-sleeves out-of-doors to allow the vaccination to dry, on one of our days in January.

For the sake of comparison, I introduce the mean solar radiation of Denver as compared with that of the Maloja for four months, which contrast is not unfavorble to Denver (see Table VII). It is probable that in the Maloja the solar radiation was somewhat increased by the reflected rays from the sun.

SUNSHINE. - In dwelling on these points it would

reference to the clouded days and hours of sunshine. The tables on this point are quite full (see Table III). In the year 1892, we see that there were 59 days that were totally clouded, which is somewhat in excess of the average obtained by a previous table. Glancing through the table, it is seen that this is in excess of that which existed in El Paso and Santa Fé, but that it is greatly under San Diego, San Antonio, Los Angeles, Jacksonville, Augusta and Tucson, and still

	10	enver	Jim	e
months	9:08 am	1:08 Pm	5:08 Bm	all Da gani Spm
September	12		3	0
October	Z	2	5	1
December	13	4	6	1
January	1.0	13	3	1
February	1.9	9	5	1
Chail	12	2	7	3

Sunvise an day of Janua	ble X d Sumset fo	r the first
Stations	Sunvise.	Sunset
maloja	9:35 am	3:45 pm
Pontresnia St. monta	8:30 asm.	3:45 Am 3:10 Am 3:05 Am
andermate	11:45 am	3:00 Pm
Denver	7:30 am	4:37 Am.

more decidedly under Washington, Philadelphia, New York, Chicago and Boston, maintaining in this particular the reputation of Denver as a resort characterized by an open sky. It will be of interest, however, to study the question still more closely; and the table for the winters of 1884 and 1885 (see Table IX) will show the number of days in the month that were clouded (in the interpretation of the signal service) at each one of the three observations, 9, 1 and 5 o'clock,

Stations	Jan.	306.	Warch	april.	Thay.	June	guly,	and	Sapet.	Qet.	Hor	ADac.	Ange.
Denver	.5.9	60	6.6	8.8	6.0	11.1-	8.7	9.4	9.6	7.0	6.7	6.4	3.8
Portland One	14	3.5	5.5	3.5	7.3	7.3	85	*8.7	4.7	XXX	XXX	\$1.4	49
Selt Bake Gits	28	40	5.6	4.5	8.0	11.0	124	11.1	108	7.0	5.5	3.2	7.2
San Leiego	5.9	46	7.1	9.2	64	8.2	94	8.3	9.0		7.6	7.0	7.5
Santa Fe	*44	6.7	7.2	9.8	10.9	13.3	11.4	9.9	9.8	20	7.2	6.9	8.7
Jucson	XXX	300X	XXX	XXX	XXX	130	10.2	10.3	10.7	9.5	87	8.1	9.6
washington	3,6	3.7	5.0	5.8	7.9	9.6	9.0	9.2	8.1	7.8	4.3	4.5	4.5

and the number of days that were clouded all day long at each one of these three observations, which shows that in the eight months under consideration, from September to April inclusive, there are only 11 days that were completely clouded; that is, 11 days out of 242 that were clouded all day long, which is certainly a very great showing in favor of a possibility to an out-of-door life in Colorado.

I wish to introduce now another table to illustrate

Stotions.	Jan	Fel	March	april.	May	June	July.	and	Sept.	Oct.	non	100	Onleas
Denver Philadelphia Portland, Ore. Saltkake Bitg San Diego	60 37 15 30 58	33 24 37 42	55. 47 34 47 60	66 44 26 34 71	42 46 49 55 46	74 55 47 738	59 XX 56 83 66	69 59 863 81 62	77 708 86.	62 64 XX 62 66	67 42 XX 56 75	52 42 916 35	62 4/9 3/0 57 62
Santa Fa Lucson Washington	36	62 XX 34	61 XX 42	76 XX 44	78 ** 57	92	79.	73	79 86 65	61 83 65	70 82 43	20 80 80	70 82 52

the absolute number of hours of sunshine in Denver and other stations in the United States for the twelve months of the year 1892 (Table XI). The observations are recorded by photographic instruments and are scientifically obtained. The table shows clearly the great excess of hours of actual sunshine in Denver over either Philadelphia or Washington, though not as great as are found in Santa Fé or Tucson. If we compare the hours of sunrise and sunset of the first days of January in Denver with those of the favored resorts of the Engadine, it will be seen that we have nearly

two hours to their one of possible sunshine (Tables X and XII). Another table giving the percentage of possible hours of sunshine shows that in January, 1892, we had an average of 60 per cent. of our possible sunshine as against 37 in Philadelphia and 36 in Washington. A-somewhat similar and favorable comparison will run through the table, so that we learn that seasonally Denver's climate affords favorable opportunities for an out-of-door life as regards the dryness of the air, the small amount of precipitation, the temperature and the number of clear days, the large amount of possible hours of sunshine and an equally large amount of actual hours of sunshine.

SEASONAL WINDS. — The question of winds remains staring us in the face (see Table IV). Examining with reference to seasons we find the same relative small daily velocity of wind as we found to exist by a previous table. While this might be granted, we are constantly being reminded of our occasional high winds and dust storms, so that this really demands a closer attention. If by high wind is meant a gale in which the wind blows forty miles an hour or more, we see that in the year 1892 we only had 3 such winds in Denver, as against 15 in El Paso, 3 in Santa Fé, and 7 in Tucson; and as against 3 in Washington, 5 in Philadelphia, 6 in New York, 59 in Chicago and 8 in Boston; which fact would possibly astonish our critics. If, however, we take a wind of much less velocity, to quote from a previous article, we learn that even in Denver the days in which there was a wind of 18 miles or over for two consecutive observations of the three (nine, one and five P. M.) in 1886, were as shown in Table VIII.

We also learn that there were about an equal number of days when there was a wind of 18 miles or over at only one of the three observations, a showing that is very favorable to the Colorado climate, so that we learn from this table that while the average daily velocity is small, there is also a very favorable showing with reference to the number of days to which we are subjected to wind of any great velocity.

A statistical report must perforce be somewhat prolix and dry; I feel, therefore, that I should beg your indulgence for having detained you with a consideration of figures; but I cannot but hope that the tables introduced may be of service to the members of this Association in assisting them to a knowledge, not only of the climate of Denver, but of the other centres and other resorts throughout our country.

THE TECHNIQUE OF VACCINATION.1

BY WILLIAM N. SWIFT, M.D., NEW BEDFORD.

I HAVE collected a few statistics in regard to the manner of performing the operation of vaccination in different localities.

I have answers to a list of questions on this subject from the health officers of ninety-nine of the largest cities in the United States and Canada.

Question 1. Have you any prescribed rules in regard to the manner of performing the operation of vaccination?

I find twelve cities have such rules, while eightyseven have no prescribed regulations and the matter is left to the physicians who are detailed to this work.

¹ Read before the Massachusetts Medical Society, June 12, 1894, and recommended for publication by the Society.

Question 2. Is it the custom of vaccinators in your city to wash the skin before vaccinating?

In thirty-nine cities it is the custom to wash the skin; in sixty cities this is not done.

Question S. Are any other antiseptic precautions used?

There were eighty-eight negative and eleven affirmative answers to the question, and in only four cities is it the custom to use any antiseptic solution. The other seven affirmative answers referred to the cleaning of instruments.

Question 4. At how many points is the virus inserted?

In fifty-one cities it is the custom to vaccinate at one point; in twenty-six cities at two points; in eleven cities at one or two points; in three cities at three points; in one at four points; in one at five points; in one at one to four points; in one at two to five points, and in two the answer was variable.

The cities where it is the custom to vaccinate at one point include Chicago, New York, San Francisco, Philadelphia, Washington, New Orleans, Brooklyn, Detroit, New Haven, Portland, Me., Richmond, Va., Lowell and Lynn, Mass.

It is the custom to vaccinate at two points in Quebec, St. Louis, Milwaukee, Pittsburgh, Pa., Worcester, Mass., Savannah, Ga. At three points in Boston, Providence, and Toronto, Canada. In St. Paul, Minn., two to five insertions are made, and at Minneapolis, Minn., five.

Question 5. Is any bandage or dressing used to protect the point of inoculation?

In seventy cities no bandage or dressing is used. In only twenty-two is it the custom to apply one, and in seven it is sometimes used.

Question 6. Have you in your experience seen septic infection follow vaccination? In what proportion of cases does septic trouble follow vaccination?

To the first part of the question sixty-two had never seen septic infection follow vaccination, while twenty-six answers were in the affirmative. The statements in regard to the proportion of cases in which septic trouble occurs varied very much from five per cent. in Allentown, Pa., and three cases in three hundred and fifty in Newton, Mass., to one case of erysipelas in 30,000 in Providence, R. I.

Vaccination in England is controlled entirely by an act of the Privy Council, and is under the direct supervision of the Local Government Board. The public vaccinators are appointed by guardians of the poor in the different parishes. The rules require the careful registration of all cases and the results in each case. In all primary vaccinations such insertions of lymph must be made as will produce at least four separate good-sized vesicles or groups of vesicles, not less than an inch from one another. The total area of vesiculation on the same day, in the week following the vaccination, should not be less than half a square inch. The rules advise against the use of any needless means of protection or of dressing to the vaccinated arm.

I have an answer to my letter from Dr. Robinson, public vaccinator in Birmingham. He said patients must come clean, no especial washing is done. Sometimes a boracic-acid solution is used. No bandage is applied. The virus is inserted at two points on each arm. He has seen sepsis from filthy clothing and from wounds other than those of vaccination. He

thinks sepsis occurs in about one to five or seven hundred from unclean applications.

In Glasgow, Scotland, there are no rules. Washing is only done when plainly needed. No other antiseptic precaution is taken. The lymph is inserted at from twelve to sixteen points. No sepsis is seen except from filth.

An answer from Belfast, Ireland, states that they have no prescribed rules; that it is not the custom of vaccinators to wash the skin. The virus is inserted usually at two points, but frequently at three or four. No bandage is used. Sepsis only comes from gross carelessness and filth.

In Stockholm, Sweden, there are no regulations. They wash carefully. No other antiseptic precautions are taken. Five insertions of lymph are made on each arm. No dressing is applied. They see no sepsis.

In Amsterdam, there are no rules. No washing is done or other antiseptic precaution taken except to have clean instruments. The virus is inserted at ten points. No septic infection follows vaccination.

In Antwerp, there are no regulations. Washing the skin is sometimes done, usually no other antiseptic precautions are taken. From three to six insertions are made. A dressing is used, cotton with a light bandage. Sepsis is very seldom seen; perhaps one case in 1,000.

In Hamburg the regulations for Germany are in force. Filthy subjects are not treated, but no washing is done. No other antiseptic precautions are taken, except to have aseptic instruments. The lymph is inserted at six points. No dressing is used. Septic infection can only come from impure lymph or from filth coming in contact with the ruptured pustule. Sepsis is very rare. Careful registration is kept of all vaccinations made and the result. The patient is required to report at the end of seven days, and any one who does not report at the end of ten days without sufficient reason is subject to a fine.

In Berlin the regulations for Germany are in force. They sometimes wash the skin with soap and water, and sometimes with antiseptic solutions. They insert the virus at six points. They use no dressing, and see no septic trouble.

In Dresden the German regulations apply. The patients must come with clean arms and clean clothing, otherwise they are refused. The instruments used are sterilized. Three to five insertions are made on each arm. No dressing is used and no sepsis seen.

In Vienna they have the Austrian regulations. The arm is washed with soap and water, and a two-per-cent. solution of carbolic acid. They insert the lymph at two or three points on each arm, and use no dressing or bandage. No fatal case following vaccination is on record, but a relatively small number of cases of erythema, erysipelas or phlegmonous inflammations occur.

In all the departments in the city of Paris the vaccinating is under the direction of the Institute of Animal Vaccine. Vaccination is always done directly from the heifer to the patient.

It is a regular rule in all the Paris schools that the skin shall be washed. This precaution is becoming little by little a custom with doctors. No other antiseptic precautions are taken. They vaccinate at two points on each arm, use no bandage, and never see sepsis.

arm. He has seen sepsis from filthy clothing and from wounds other than those of vaccination. He the skin and no antiseptic precautions are taken.

virus is inserted at three points on each arm. No dressing is used, and septic infection is rarely seen.

In Rome the regulations for Italy are in force. The skin is not usually washed, and the only antiseptic precaution is to use clean instruments. They vaccinate at two points on each arm. Usually no bandage is used, but sometimes a gelatine plaster is applied. At the time of the popes, when the humanized virus was used, syphilis was not uncommon. Now that animal lymph is used no bad results are seen. ful records are kept of the results of vaccination. The whole matter of supplying lymph is in the charge of the National Vaccine Institute. One regulation is that no one shall be allowed to use vaccine lymph that is more than ten days old.

differences in the manner of performing the operation it is the custom to vaccinate at only one point. of vaccination in the different localities.

Only a small proportion of public vaccinators take the precaution to wash the skin before vaccinating.

The number of points at which the vaccine lymph is inserted varies very much.

Marson's statistics based on 5,000 cases of smallpox in the London Small-Pox Hospital give the following results:

	-	Classification of Patients.	De	cent. of aths in h class.		or 3.
1.	Un	vaccinated		35.	31016	. p . 0
2.		ted to have been vaccinate but having no cicatrix	ed.	23.5		
3.	Va	ccinated :				_
	a.	Having one vaccine cicat	rix	7.73	Good, Indifferent,	6.4 16.7
	b.	Having two vaccine ci	c a -	4.70	{ Good, { Indifferent,	8.7 11.5
	c.	Having three vaccine ci-		1.95	Good, Indifferent,	3.7
	d.	Having four or more vacci		0.55	(Good, Indifferent,	2.7 4.8
	A .	Having well-marked ci-		2.52		
	в.	Having badly-marked cic		8.82		
4.	Ha	ving had small-pox \dots		19.		

In patients with one well-marked vaccine cicatrix the death-rate was 3.83 per cent. Among cases where it was badly marked the death-rate was 11.91 per cent.

In patients with two well-marked cicatrices the death-rate was 2.32 per cent. Among cases badly marked 8.34 per cent.

Dr. Seaton in quoting these figures says: "In regard, therefore, to the expectation of any case of smallpox turning out badly, the question is not merely whether the patient has been vaccinated or not, but also how he has been vaccinated."

Dr. Seaton and Dr. Buchanan, during the epidemic of small-pox in London in 1863, made observations on upwards of 50,000 children in various national and parochial schools and workhouses:

lent quality

	Classification of Children Examined.	Proportion marked with Small-Pox per 1,000 Children.			
1.	Having no vaccine marks	360.00 in 1,000			
2.	Vaccinated:				
	a. Having one vaccine cicatrix	6.80 in 1,000			
	b. Having two vaccine cicatrices	2.49 in 1,000			
	c. Having three vaccine cicatrices	1.42 in 1,000			
	d. Having four or more vaccine cica-	0.87 in 1,000			
	1. Having cleatrix or cleatrices of bad quality	7.60 in 1,000			
	2. Having cicatrix or cicatrices of tolerable quality	2.35 in 1,000			
	3. Having cicatrix or cicatrices of excel-	1.00 fm 1.000			

The evidence is conclusive, as Dr. Seaton states, "that the liability of any individual to take small-pox severely after vaccination, and probably the liability to take it at all, will be inversely as the goodness and amount of the vaccination."

He also says: "To produce at least four perfect vesicles, leaving four characteristic cicatrices, should be the aim of every vaccinator."

Dr. J. S. Billings writes me: "The character of the vesicle is more important than the number, but there seems to be a definite relation between the extent of surface involved in the vesicle or vesicles to the amount of protection afforded.'

With such strong evidence as I have quoted in favor of multiple vaccination, it is astonishing that in The evidence I have collected shows important fifty-one out of ninety-seven cities in the United States

It is proved by statistics that such vaccination does not give the protection from small-pox that vaccination is capable of doing.

There has been lately a great outcry against severe vaccination. This comes, perhaps, from the fact that small-pox is so uncommon, the public and physiciaus also have almost forgotten what a terrible disease it is. Any one who has seen small-pox in an unvaccinated subject must hold the opinion that no vaccination can be too severe if its severity aids in protecting the individual from this disease.

In regard to a dressing, I think it is much better to use one in spite of the almost universal custom of public vaccinators not to do so. It is certainly most desirable that the vesicles should not be ruptured and the crusts should be allowed to dry up; but, I think, a small dressing of sterilized gauze and a light bandage help very much in securing this object. Any form of adhesive plaster is, I think, very injurious. Primary sepsis, that is sepsis immediately following the operation of vaccination, I believe does not occur. results are all secondary, caused by the infection of broken vesicles or pustules. Such complications can be avoided if the points of inoculation be kept perfectly clean by an antiseptic dressing through the whole process. Septic infection from vaccination is certainly surprisingly rare considering the careless way in which vaccinations are made and the cases left to take care of themselves. It is my opinion, however, that sepsis to a greater or less extent is more common than statistics show. I have noticed that the smaller cities have reported a larger proportion of cases. This may be because in the larger cities the cases are lost sight of. A careful record ought to be kept certainly of each public vaccination, and the result. This is especially important when our lymph comes to us, as it does, from private individuals and about the freshness of which there is often doubt.

In a communication from the secretary of the Local Government Board the following statement is made in regard to the occurrence of sepsis and the use of dressings after vaccination: "The official data on these matters have been stated in evidence before the Royal Commission on Vaccination which may be expected shortly to issue its report." This shows the English authorities have considered these matters of sufficient importance for investigation by the royal commission.

Except in epidemics of small-pox, children should only be vaccinated when in good health. Cutaneous 1.22 in 1,000 eruptions of all kinds are a contraindication.

Vaccination should be done with the same care as any minor surgical operation. The skin should be carefully washed with soap and water.

The vaccine lymph must be fresh, certainly not

more than one week old.

The virus should be inserted at more than one point. The point of inoculation should be kept perfectly clean throughout the whole course of the disease, and protected from friction. The patient, meanwhile, should be considered as suffering from a mild disease.

My observations show that public vaccination in this country is not, as a rule, done as it ought to be. The question of a proper technique for vaccination is a matter of very great importance, and the whole subject needs careful investigation and revision.

RADICAL DIFFERENCES IN METHODS OF PRODUCTION AND CULTIVATION OF VACCINE LYMPH.¹

BY SAMUEL W. ABBOTT, M.D., WARRFIELD.

In this paper I shall point out briefly some of the different conditions under which vaccine lymph is cultivated and produced for the purposes of vaccination, at the present day, having special reference to that which is termed animal or bovine vaccination.

Biologically speaking, all vaccination is animal vaccination. At the present day vaccination with non-humanized or bovine lymph is the rule in the United States, and probably ninety per cent. of all vaccinations throughout the country are made in this manner. With the exception of the infinitesimal liability to infection by syphilis or other human disease, as was conclusively proven by Dr. Cory, of London, in July, 1881, by submitting himself for experiment, there can be no objection to the method with humanized lymph.

In many countries of Europe humanized vaccination is practised to a considerable extent. The old Jennerian method has taken so strong a hold in England that it is not an easy task to change it. Another reason exists in the peculiarity of the English law, which requires every child vaccinated at the public expense to be presented again to the vaccinator for inspection at the end of a week, under a penalty of £1, the vaccinator having the legal right in every case to obtain a supply of lymph from the child for future use. The tendency of this law is to make the change from humanized to non-humanized lymph somewhat difficult. The use of bovine lymph, however, is steadily gaining ground in England.

In France, on the contrary, the fact that it was lawful to pay to the mothers of children a fee of several francs for the privilege of taking lymph from the arms of infants may have been one of the minor causes which proved a hindrance to "arm-to-arm" vaccination, and may have led to the more rapid in-

troduction of animal vaccination.

The greatest advance in use of calf lymph in foreign countries has been in Germany, where the ratio of such lymph used increased from about 2.5 per cent. in 1879 to 7 per cent. in 1882, and then still more rapidly to 78 per cent. in 1888, and 89 per cent. in

¹ Bead before the Massachusetts Medical Society, June 12, 1894, and recommended for publication by the Society.

1889, and will probably soon entirely displace the use of humanized lymph.

The radical differences in the methods in use in different countries for the production of calf lymph may be stated as follows:

(1) The existence to a greater or less extent of government supervision or control in nearly every for-

eign country.

In England the Local Government Board, which constitutes the general sanitary authority of the country, established a station in London about 12 years since, which has been constantly under the supervision of Dr. R. Cory.

In Belgium a National Vaccine Institute was established by the government in 1865, under the direction of Dr. Warlomont, who is one of the highest authorities on the subject in Europe. His works are accepted as standards as to the technique of calf vaccination.

In France Dr. Lanoix introduced the practice in 1865, having learned its value from Dr. Negri of Naples while the former was on a visit to that city. As a result of the efforts of Dr. Lanoix several private establishments followed the introduction of the practice at Paris, and some of the French cities have establishments maintained at the public cost. There are also one or more societies in Paris which maintain calf vaccination and furnish vaccination free to those who apply for it.

In Germany the government provides by law for the establishment of public stations for the production of calf lymph in all of the large cities, at present twenty-five in number. It also provides for the general supervision of all these establishments under the most careful and minute regulations. Each establishment is required to give an annual report of its operations, a summary of which may be found in the reports of the Imperial Board of Health. These stations furnish annually enough lymph to vaccinate about two million persons.

Similar though not so careful regulations exist in Holland, Austria, Italy, and in Japan.

Contrast with the foregoing statements the methods in vogue in the United States. With the exception of one station in Minnesota, now successfully conducted under the direction of the State Board of Health by Dr. Hewitt, I know of no establishment which has any supervision whatever. As a consequence there must be a great diversity in the methods employed and in the material produced.

(2) Vaccine Lymph as an Article of Commerce or Trade. Partly as a consequence of submitting quietly to the method of production of vaccine lymph by private parties in this country, the business has become very largely commercial in its character, the private producer conducting his operations in such a manner as to secure the greatest possible returns with the least possible outlay of money. Vaccine lymph is bought and sold, and competition in prices naturally leads to deterioration in the quality of this important article, which should be freed from every influence which may in any way lead to its impairment. But the danger lies not only in the fact that it is an article of commerce, but still more in the methods of its sale. The business is entrusted to druggists, middlemen and travelling agents who solicit orders very much after the manner in which boots, shoes, dry goods and patent medicines are sold. But vaccine lymph is an extremely

² At the time of writing this paper this statement was correct.



perishable article, while dry goods are not. As a consequence of this method of sale, vaccine lymph often remains for weeks or even months in the drawers and unbroken packages of the middlemen or agents, and when needed for use the guarantee of the producer is disregarded, and the lymph of several weeks or months ago is sold and finally used for vaccination. As a result it proves inert, and the consequence is charged to the insusceptibility of the infant or vaccinated person. As a matter of fact, when vaccination is conducted under the best possible conditions of fresh lymph, insusceptibility is found not to exist, or at least to be a matter of the rarest occurrence. Dr. Cory stated that he had vaccinated nearly 50,000 infants with but one unsuccessful result, and in this exceptional case the usual opportunity for repeated trial was not afforded. (See Second Report of Parliamentary Commission, 1890, p. 142.) If such vaccinations are being made during a brisk epidemic of small-pox, and in families which have been exposed to the disease, it may happen that some children will take the disease and die, during the delay occasioned by waiting to ascertain whether the lymph of uncertain source and age will prove successful or not, and thus the practice of vaccination falls into disrepute. Guarantees, it is true, are given that a new supply will be furnished in case of failure, but of what avail is a guarantee if the exposed person meanwhile contracts small-pox and dies while trying the experiment of waiting to see whether the old lymph will "take" or not?

Now, one remedy for this condition is the abolition of middlemen, the procuring of lymph direct from the producer, and the stamping of every package of lymph with the date of its collection — an improvement which cannot very well be accomplished under existing conditions in this country. Government production can do away with the incentive to profit, and furnish the lymph either at cost or free of all cost. The question of expense ought to be the last consideration which should be allowed to interfere with the production of an absolutely faultless lymph.

In an excellent paper by Dr. Harvey Reed, of Ohio, some of these points are highly commended. (See Monthly Record, published by State Board of Health of Ohio, Vol. vii, p. 97, 1894.)

(3) Methods of Insertion and Implantation. Bovine

(3) Methods of Insertion and Implantation. Bovine vaccination is initiated in the heifer or calf by several different methods, or rather from different sources:

(a) By the introduction of humanized lymph taken from the vesicles of a primary vaccination.

(b) Animal lymph, subject to the same conditions as humanized lymph: that is, direct or fresh lymph dried upon quills or ivory points, or mixed with glycerine and carefully preserved.

(c) The solid and fluid parts of the so-called natural cow-pox.

These are the methods advised by the German government in its law of April 28, 1887, and, as may be seen, preference is given by this law to the use of humanized lymph for the purpose of initiating a series of calf vaccinations. If this government gives such counsel, a government which does not enact laws except upon the basis of careful observation and experiment, and employs for its purposes men who are acknowledged experts, are we to blindly follow the statements of those who have taken up this line of work merely as a source of profit or trade, without giving

There has been much speculation upon the question whether small-pox and cow-pox are one and the same disease, the latter being only a modification of the former, and this speculation has continued for a century. But the brilliant discoveries of modern bacteriology throw a flood of light upon the question, by experiment, by observation and by analogy. We are forced to conclude that vaccinia bears very much the relation to small-pox, after transmission through the cow, that attenuated rabies after transmission through the rabbit bears to the exceedingly fatal and virulent disease in the dog, or that anthrax after successive attenuations bears to the extremely fatal disease in its natural form, as was demonstrated in the most brilliant manner by the experiments of Pasteur upon a herd of sheep and cows at Melun in 1881. All these experiments are only applications of the process of artificial selection by the hand of man to those organic bodies known as bacteria by the proper use of soils and methods of cultivation. And if it is possible to diminish the virulence of infectious processes by such methods while the protective power still remains, is it not also possible by certain methods to re-establish the original virulent characteristics, while still retaining the protective power? Or, if those original virulent properties are not re-established, may not other and abnormal processes of a dangerous character be established in their place?

At a meeting of the Suffolk District Medical Society in February last, a committee who had witnessed the process of animal vaccination at some establishments in this State, stated that animals were being vaccinated by means of large scarified patches, each of which would cover an area of several square inches, and were more or less exposed to soiling by the excreta of the animal. It is a question worth considering whether this plan continuously pursued may not in time reestablish to some extent the serious characteristics of the original disease.

There is no clear evidence to show that cow-pox originates in the cow. The mere fact that casual cases of cow-pox are to be found in the cow proves nothing. To call them "spontaneous" is contrary to all progressive knowledge as to the natural history of infectious diseases. One might as well call an oaktree in the forest "spontaneous" because he cannot

find the acorn from which it was produced.

In 1870 or 1871 great pains were taken to import vaccine lymph from Paris for the purpose of animal vaccination, and the name "Beaugency" curiously enough became a symbol of purity in this important article, as though this infectious disease "cow-pox" was unknown except in foreign lands, and yet at that very time dairymen within a dozen miles of this city were separating infected animals from their herds to prevent its further spread, being themselves familiar with the peculiar characteristics of the disease.

Let us now consider for a moment the following points, which have a direct bearing upon the natural history of casual small-pox. By the term "casual" I mean those cases which have been occasionally found among dairies, and were not intentionally inoculated, that is to say, vaccinated for the purpose, either for experiment, or for the production of an increased quantity of vaccine lymph.

nents of those who have taken up this line of work (a) Casual cow-pox in the cow usually occurs durerely as a source of profit or trade, without giving ing epidemics of small-pox among men. All of the enecely a thought to the scientific side of the question? cases which I find on record in this country for the last half century, about forty in all, occurred in years of small-pox epidemics. In Europe its occurrence was still more frequent in the early half of the century. It still occurs in Gloucestershire where Jenner first saw it, but not so often as in his day when smallpox was much more common than now.

Ceely's cases, recorded in his papers, occurred in 1838, a year in which there were 16,000 deaths from small-pox in England. One case is recorded in which some old clothes, stripped from the small-pox patient, were thrown into a meadow where cows were feeding; and the cows, having access to the clothing, were attacked with cow-pox.

The famous so-called spontaneous case at Beaugency occurred in the French department of Loiret in 1866. In this same department, during the ten years 1861-71, there were more deaths from small-pox in a population but little larger than that of Essex county, than there have been in the whole State of Massachusetts in the past twenty years, in a population of 2,000,000 or more. Now when we know from experiments, not only of early observers but of quite recent experimenters, such as Haccius, Eternod and others, that vaccinia may be induced by the inoculation of smallpox upon animals, is it strange that such cases should occur casually in times of epidemic?

(b) There is no evidence that cow-pox occurs among animals in the wild state. No doubt, it may be induced among them, but I find no record of its casual occurrence among them. Buffaloes are susceptible to inoculation with vaccine lymph, when artificially introduced.

(c) Casual cow-pox does not occur among bulls. (Ceely.)

(d) It does not occur among cows which are dry.

(Ceely.)

(c) There is no evidence that cow-pox is transmitted from one animal to another in herds except through human agency.

From these facts it would appear that cow-pox occurs, not only among those animals which are associated with man, but with those which are associated with him in the most intimate and daily contact and handling of the animal; and it is manifested upon those parts of the animal which are chiefly exposed to such contact; such a contact, in fact, as would be likely to impart infection to her by the hands, provided such infection should in any way be possessed by the milker.

In the case of horse-pox, a disease of the heels or hoofs, what part of the horse is more often touched by human hands than his boofs and heels?

The cow is, therefore, simply our ally or efficient helper in the great scheme of disease prevention, enabling us for the time being to employ her as the means of procuring, cultivating, multiplying and diminishing the virulence of the proper means of de-

So also the rabbit plays no part in the natural history of the rabies, but yet acts as an important ally in preventive treatment.

I speak of these points because too great importance has been attached, in this country, to the comparatively unimportant question of pedigree, or stocks of animal lymph, to the exclusion of far more weighty questions which have been neglected.

But to return to the question of the best mode of in-

methods are chiefly practised: (a) Puncture, (b) Incision, and (c) Scarification.

These terms are in themselves sufficiently explicit as to the modes of insertion. In foreign establishments the first two methods are chiefly practised, though scarification is also sometimes employed. an inspection of certain Continental establishments which Dr. Murphy made for the Local Government Board in 1883, he found that in the Dutch establishments vaccination by puncture had entirely taken the place of incision, for the reason that the "vesicles resulting from incision have a greater tendency to become advanced and purulent than those resulting from puncture." In Brussels incision is still practised.8

The incisions referred to are not more than 10 to 12 mm. in length, and 4 to 5 mm. in depth. Now. if incisions were abandoned for reasons of this character, what can be said of the method by scarification in practice in some places in this country, where many surfaces having an area of from one to four square inches (6 to 25 cm.) are inoculated? These scarifications, too, are allowed to progress two days beyond the usual period advised by the best authorities, and are made in a region where the daily soiling of urine and feces may have free access to the scarified surfaces. These large surfaces are attended by swelling, not only of the surrounding integument, but also often of the neighboring lymphatic glands, and if there is any reason for imitation of natural processes, that is to say, in the production of vesicles like those of variola, having a diameter of 5 to 12 mm., then the process of scarifications of large size carried on through 500 to 1,000 generations as has been done, may in time reproduce the severe type of vaccinia which shall possess far more virulence than the form with which

we have for a long time been familiar.

(4) Age of Animals. Unvaccinated bovine animals of any age are susceptible to cow-pox artificially im-As a general rule the average age of animals used for purposes of vaccination in the United States is greater than that of animals used in most foreign countries. At two of the establishments in Massachusetts adult animals, or at least animals over one year old, are used, and at two others calves of three to eight months, while in several establishments in other parts of the country animals varying from six months to two years are employed.

In two or three small German cities heifers of one and two years are employed, but in most of the German establishments the average age is about three months. The law upon this point reads as follows:

SECTION 2. The older animals are only to be used when calves cannot be had. The calves should be at least three weeks old . . . calves of five weeks old and upward are to be preferred. Law of the Bundesrath, April 28, 1887.

The average age of calves used in Holland, as stated by Dr. Murphy, was "three to five months." Those used at the principal station in London are about five months old.

Warlomont states the question by weight and says that the calves should weigh at least 100 kilogrammes (about 220 pounds) each.

Vaillard says: "Il y a cependant un réel avantage à utiliser de préférence les jeunes sujets, agés de deux mois et demi à trois mois."

From the point of economy there are some advansertion or implantation of lymph in the animal. Three ment, p. 27. tages in the use of adult animals. The chief end secured is the increased product of lymph.

This is offset to some extent by the increased cost of care and food.

On the other hand, the advantages of employing young animals are mainly those of convenience and sanitary security. Young animals can be more conveniently handled and are almost absolutely free from the danger of tuberculosis.⁴

Vaillard further says: "Out of 21,820 calves slaughtered at Augsburg, not one was tuberculous, while out of 10,988 horned adults 321 or 2.9 per cent. were tuberculous. At Munich there was scarcely one tuberculous calf in 100,000, and at the slaughter-house at Lyons the record showed only five tuberculous calves out of a total of 400,000 animals in a period of five years."

In summing up this phase of the subject, then, the transmission of the infection of tuberculosis is rendered extremely improbable by the following facts:

(a) By reason of the age of vaccinifers, calves or young animals are chiefly used. The young of the bovine species are more exempt from tuberculosis than the young of the human species.

(b) Supposing an animal to be tuberculous (that is, having tuberculous organs), there is but little reason to believe that the tubercle bacilli will be found in the serum of vaccine lymph taken from the integumentary portions of the animal.

(c) Finally, if the vaccine lymph should actually contain tubercle bacilli, experiment has shown that, by the ordinary methods of superficial insertion, there would be no danger of implanting the germs of tubercle where they would infect the subject, since tubercle bacilli can only be successfully transmitted by deep inoculations, not by superficial scarifications.

Upon this point, then (the age of animals), the preference does not appear to be a matter of so great importance as might at first thought be supposed. But, all things considered, animals of less than one year of age ought to be employed.

Bovine animals, it is true, are subject to other diseases beside tuberculosis, but it does not appear that there is danger of their transmission to man by means of vaccine lymph.

(5) Time of Collection of Lymph. — In no point does American practice, so far as I can learn, differ from that of foreign establishments so radically as in the time which is allowed to elapse between the vaccination of the animal and the collection of the lymph. In the United States, the older vaccinators, following blindly the same practice employed for collecting lymph from infants, as a rule established the custom of taking the lymph at the end of a week, and this has become almost an established rule of practice, with possibly some exceptions in which collection has been made a day earlier. A better way of expressing the time, in order to avoid ambiguity, is to state it in hours, as multiples or fractions of 24. The average time in practice in the United States then may be stated as 7 times 24 hours (168), or in exceptional instances 6½ times 24 (156) hours from the time of insertion, while the average period in Germany, Holland, Belgium and England is at least as brief as 5 times 24, or 120 hours. This custom in the last-named countries has been established as the result of careful observation and experiment of a very large number

⁴ Vaillard: Manuel pratique de la Vaccination Animale.

of observers, most of whom are acting under government supervision and have nothing in view but the absolute welfare of the community, independent of pecuniary considerations.

The practice of short periods has certain decided

advantages:

(a) The shorter the time the less the liability of the vesicle to become purulent at the time of collection.

(b) During a period of four, five or six days the vesicle is much less liable to become ruptured or infected from without than when it is allowed to continue to the seventh day (168 hours) before the lymph is collected. This is a matter of vital importance, and when viewed from a bacteriological standpoint, involves to a very considerable extent the purity of the lymph produced.

The disadvantage of short periods, when the question is viewed from the standpoint of private ownership of vaccine establishments, consists in the fact that the quantity of lymph to be obtained from a vesicle or group of vesicles at the end of 120 hours from the time of insertion of lymph, is very much less than that which can be obtained from the same vesicle or group of vesicles at the end of 168 hours when the vesicle has attained a greater size and degree of development. This is, however, a purely economic and not a sanitary view of the question.

(6) Disinfection. Cleanliness. The term "asepsis," as sometimes used in connection with this important work, may almost be deemed to be synonymous

with absolute cleanliness in every detail.

Vaccination is itself an infective process, hence the use of disinfectants, if they are used at all, must be intelligently conducted, and they should be so employed that nothing of a disinfectant character can touch or enter, or otherwise affect the lymph itself during the process of collection or afterwards. Not only should the buildings themselves be constructed of materials which will admit of thorough cleaning, but the administration should be such that the animals shall have the best possible care, grooming and feed; the stalls, floors, mangers and walls must be kept clean, the excreta frequently removed, the operators and attendants must have scrupulously clean hands, and all instruments used should be thoroughly cleansed in boiling water after each use.

The following provisions of the German law of 1887 relate to this subject and are worthy of general adop-

tion.

SECT. 14. All of the implements used in vaccination and the collection of lymph, as well as those used in the subsequent handling and transporting of it, must be of a material and shape permitting thorough cleansing and disinfection. They must be used for one purpose only, and before and after each use they must be cleansed and disinfected when necessary.

SECT. 16. The surface selected for vaccination must be shaved, and thoroughly washed with soap and warm water. Afterward it must be disinfected with a solution of mercuric perchloride (1 to 1,000), or a three-per-cent solution of carbolic acid, and finally rinsed with boiled

water.

(7) The Slaughter of Animals before the Use of Lymph. This practice, so far as I have any knowledge of the question, is not carried out in the United States. It has, however, been the rule for many years at the Belgian Institute under the charge of Dr. Warlomont.

All possible danger of suspicion as to the preparation of animal vaccine may be removed, "by delivering it only after the animal from which it is taken has been proven by autopsy to be perfectly healthy. This is a precaution that should not be neglected." (Warlomont.)

Here again the German law is quite explicit, and reads as follows:

SECT. 5. After taking the vaccine lymph the animals must be killed and examined by a veterinary surgeon. The examination should especially be directed to the condition of the navel and of its vessels, the peritoneum and pleura, the lungs, liver and spleen.

SECT. 6. The veterinarian must give a certificate of

every examination.

SECT. 7. The lymph must only be issued to the vaccinating physicians when the autopsy shows that the animal was healthy.

The following section of the same law, although not related to this special subject, shows the general progressive character of modern legislation in Germany in this direction.

SECT. 33. The public vaccine establishments are in duty bound scientifically and practically to improve vaccination, and consequently to carry on investigations by way of experiment, clinical observation or otherwise.

In summing up this phase of the subject, then, I believe that improvement may be made in the production of vaccine lymph in this country by the adoption of the following general and special measures.

(1) Cultivation and production of vaccine lymph by the United States Government for the use of the Army, the Navy and the Marine-Hospital Service, and for all public institutions managed by the government.

Each State to produce its own lymph for the use of its public institutions and for the use of all local boards of health of cities and towns.

- (2) The abolition of agents and middlemen and the issuing of lymph directly from the producers to the parties who use it, every package to be stamped with the date of its collection.
- (3) The employment of better and more uniform methods of inoculating animals.
- (4) The exclusive use of animals less than one year old.
- (5) Limiting the time of collecting of lymph to a period of five days, or at the outside to six days from the date of its insertion.
- (6) The adoption of careful rules for every establishment relative to cleanliness, the care of animals,
- (7) If adult animals are used, a requirement that they shall be slaughtered before the lymph is issued.

LATERAL TRACTION IN HIP-DISEASE.1

BY CALVIN-GATES PAGE. Harvard Medical School.

LATERAL traction was applied to the following eight cases at the Children's Hospital, in order to throw some light on the following problems in traction suggested by Dr. E. H. Bradford. By his kindness and that of Dr. H. L. Burrell, I am able to add notes on three adult cases treated at the Boston City Hospital.

¹ Read, by invitation, before the American Orthopedic Association at Washington, D. C., May 30, 1894.

Problem 1. Are there cases which are distinctly relieved by lateral traction, and by what weight?

Problem 2. Are cases more comfortable with lateral traction alone, without, in addition, longitudinal traction?

Problem 3. What are the limits of weight in lateral traction?

Problem 4. Is the limit of longitudinal traction, gradually applied and increased, the tension on the skin - provided the limb is so placed as not to pull on the stretched Y-ligament or contracted muscles, and that the limb be not adducted?

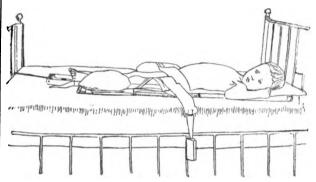


Fig. 1. From photograph of Case VII. Pulley and weight at foot of bed not shown.

The method of application is shown in Figure Longitudinal traction is obtained by a weight and pulley at the foot of the bed. The cord is tied to the middle of the wooden cross-piece or spreader, which in turn is buckled to the straps of the adhesive plaster extension. The foot of the bed should be raised to give counter-extension. The patient lies on a Bradford frame, with shoulders strapped down. The frame, made of quarter-inch galvanized-iron gas-pipe, should be as wide as the hips, and should extend four inches above the head, and as much below the feet, for a child, though it may be considerably shorter if more

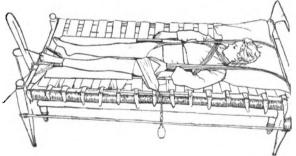


Fig. 2. From photograph of Case IX.

convenient. It is firmly padded with canvas, with a space opposite the buttocks to allow for the use of the bed-pan without disturbing the child. A folded towel pinned about the knees and another about the hips, ordinarily give sufficient fixation.

Lateral traction is obtained by a band of Canton flannel, or linen, passed about the thigh as close to the groin as possible, and attached to a weight over the side of the bed. At the Boston City Hospital a side pulley is used, so that the cord does not press on the mattress (Figure 2). Counter-traction is made by a similar band about the pelvis, fastened to a weight, or to the other side of the frame as shown in Figure 1 and Figure 2. A sand-bag at the ankle prevents abduction of the limb.

In order to test the amount of lateral traction a child can bear, I made use of a short, steel upright, clamped to the side of the frame (Figure 3). Through the top of the upright an octagonal bar was fitted to slide freely. By means of a thread cut on the bar, it could be drawn through the upright by turning a thumb-screw. The upright was made adjustable, so that the bar could be moved in any desired direction. A springbalance was hooked to the bar, and its other end passed through the thigh-band. The bar was gradually shortened by the thumb-screw, and the band pulled tight. With a frame several inches too wide, the pelvis could be fixed close to the farther side, leaving plenty of room for the stretching of the band and the spring, and the yielding of the thigh. By simply tightening or loosening the screw, it was possible to vary the tension at will.

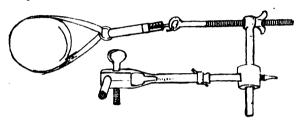


Fig. 3. Diagram of lateral-traction apparatus clamped on side of frame, with band around thigh.

CASE I. March 7, 1894. John C., six and a half years old. Double hip-disease; right, eighteen months, left, eleven months. Hips sensitive, but no night-cries.

March 10th, longitudinal traction increased to five pounds for each leg. 15th, lateral traction three pounds each. Patient more comfortable. 17th, lateral traction omitted for several hours twice. Each time patient asked to have it reapplied. 28d, end weights, 5 pounds each, omitted. Lateral three pounds each, and sandbags to prevent abduction. Two hours later no pain, but not so comfortable. 24th, no pain or night-cries. Leg abducted. End weights reapplied after being off for twenty-four hours. More comfortable.

April 8th, has continued with three pounds lateral weight and four pounds end weight. Motion increasing in both hips. Not sensitive. 10th, lateral weights omitted to-day without discomfort.

In this case lateral traction made the patient more

comfortable. Omitting end weight caused discomfort. Case II. March 5, 1894. Maggie J., five years old. Right hip-disease eight months. Moderately sensitive. Longitudinal weight three pounds. Lateral weights applied. Test for few minutes with screw: three and a half pounds, no discomfort; four and a half pounds caused pain. Lateral weights omitted for a few hours at a time. More comfortable when reapplied.

March 23d, lateral weight two pounds. End weight omitted. 24th, cried twice last night. Says wants end weight off. 27th, end weight has been off three days. Lateral weight two pounds. Seventeen cries last night. End weight, three pounds, reapplied. 28th, cried eight times. End weight increased to four pounds. 29th, cried fourteen times. End weight increased to six pounds. 30th, cried only four times. Lateral weight increased to three pounds. 31st, no 28th, cried out three times. Lateral weight two pounds cries. Lateral weight omitted.

April 2d, has had no cries. Splint applied in daytime. 8th, up in chair. Learning to use crutches.

Applied an extra-long Taylor splint, in bed, with spreader and spring balance — tension nine and a half pounds, in evening eight and a half pounds. Next morning tension had diminished to eight pounds, later to six pounds. Adhesive-plaster extension had pulled down one-half inch.

This case was more sensitive after omitting end

CASE III. Arthur L., eight years old. Hip-disease three years. Some subluxation and permanent flexion. Lateral weight one and a half pounds. Test with screw up to four pounds without pain.

March 28d, end weight omitted. Lateral traction with screw up to four pounds. No pain. Straps loosened during night and weight diminished. 26th, end weight reapplied after two days. No result. Lateral weight omitted. Hip has not been sensitive at any time.

April 8th, some flexion still remains. Not sensitive. This case could bear lateral test up to four pounds. Omitting end weight gave no advantage.

CASE IV. March 14th. Mary D., four years old. Hip-disease seven months. In hospital before. Hip now sensitive and 20° flexion. Night-cries. Longitudinal traction three pounds.

March 17th, lateral weight two pounds. Nightcries worse. 19th, lateral weight omitted. Cries ceased. 20th, night-cries again. End weight increased to five pounds. 24th, no cries since.

Lateral traction apparently made cries more frequent. Relieved by increasing longitudinal traction.

CASE V. March 12, 1894. Deborah Y., five years old. Hip-disease one year. In hospital before. Old splint. Hip sensitive for three weeks. Very sensitive on entrance. Lateral test with screw caused pain, when only two and a half pounds, at first. Lateral weights one and one-half pounds. No advantage noted.

March 28d, hip less sensitive. Lateral weight continued. 24th, lateral weight omitted. End weight three pounds.

April 8th, hip has continued sensitive, but no nightcries. Splint applied in day-time. Hip chair. 12th, an extra-long Taylor splint applied in bed, with spreader and spring-balance. Tension three and a half pounds caused pain at first, later increased to four and a half. 13th, tension remains about four pounds. Increased to five pounds. 14th, tension has remained five pounds for twenty-four hours. Skin reddened by perineal bands. Splint omitted.

Later. Hip has been more sensitive. End weight increased, and lateral weights worn with comfort.

This sensitive hip could not bear much lateral traction.

CASE VI. Elsie S., seven years. Acute symptoms two months. Probable duration two years. Sensitive hip. Marked flexion. Traction in line of deformity by means of inclined plane. Flexion gradually diminished, for four weeks.

March 11, after flexion had gone lateral weight applied, with apparent benefit. Lateral weight omitted. 17th, splint applied during day. Night-cries. 23d, hip still sensitive. Sat up, and walked a few steps with high sole and crutches. 26th, cried several times, with pain in leg. End weight increased to eight pounds. at night.

April 8th, no cries since, and hip less sensitive. Here was marked benefit from lateral traction at night.

Case VII. March 5, 1894. Allen W., six years old. Acute hip-disease; less sensitive after a few

days' longitudinal traction. See Figure 1.

March 8th, lateral weight one and a half pounds. When omitted, at intervals, patient was glad to have Test, with screw and spring-balance, showed that four and a half pounds could be borne for a few minutes without pain. When increased, there was pain due to pressure of strap on skin. Lateral weight continued. 17th, longitudinal weight in-24th, longitudinal weight creased to five pounds. increased to seven pounds.

April 8th, has continued with seven pounds end; and one and a half pounds lateral. No cries. Not sensitive. 12th, plaster has caused excoriation. Stocking extension. Extra-long Taylor splint, in bed. Spring-balance, six and a half pounds, caused stocking extension to slip. Reapplied nine pounds. Slipped down to seven pounds. One-half hour later, six and a half pounds. Increased to seven and a half pounds. At end of one hour complained of pain in perineal band; loosened, and remained comfortable at four pounds.

Lateral traction apparently made this patient more comfortable.

CASE VIII. March 17, 1894. Minnie K., seven years old. Acute recent hip-disease. Duration six months (?). Pain in knee four weeks. Marked abduction and outward rotation. End weight four pounds. No night-cries. Lateral weight one and a half pounds.

March 23d, some motion. Can be brought into better position. Lateral test with screw and springbalance for two days. Seven pounds could be borne without pain. Owing to slight change of position or stretching of straps, there remained after a time only three or four pounds tension.

As there were no night-cries and little sensitiveness, lateral traction was omitted.

This case could bear seven pounds lateral; but a weight of three or four pounds was more comfortable.

CASE IX. Boston City Hospital, January 16, 1894. Rachael E. S., nineteen years old, married, housewife. Pain in knee and thigh for three weeks. Flexion and abduction. No motion. Traction for five weeks.

February 20th, traction omitted. Up.

March 4th, pain in hip again. Traction reapplied. 18th, considerable pain. 30th, worse pain. Loses sleep.

April 5th, fracture-bed (Figure 2). Pain in hip and groin. 7th, severe pain in back. 10th, side pulley put on leg, over thigh near perineum. Makes leg more comfortable. 13th, lateral traction increased to ten pounds. Patient continues more comfortable. 20th, lateral traction continued. Patient has had less pain of late. Leg kept fully extended. Extension thirteen pounds. Lateral traction eight pounds. 25th, no pain in hip except when weights are disturbed.

May 27th, has had relatively little pain, weights changed to give best results. Just now extension eighteen and lateral three pounds. To have Taylor hip-splint soon.

This case had very marked pain, requiring morphia and a fracture-bed. Relief from lateral traction was immediate and permanent.

Bridget N. Hip-disease two months. Right thigh abducted and flexed. Luxation head of femur. Swollen, tender and sensitive.

February 4th, extension three pounds. 8th, pain; morphia to reduce pain. 17th, improving, little pain. 27th, leg gradually being straightened, slight amount of pain.

March 4th, fifteen pounds extension. Some pain. 11th, leg almost straight. 27th, right leg one and a half inches shorter than left.

April 10th, canvas stocking uncomfortable. tension ten pounds. Pain on motion. 22d, extension ten pounds. Lateral traction five pounds. 29th, no redness, swelling or tenderness about hip. No pain. Weights continued. Measured for splint.

May 27th, has continued without pain, and improving. Weights as before, except extension temporarily reduced to five pounds. Can turn onto left side.

Acute symptoms subsided before lateral traction was

CASE XI. Boston City Hospital. Sadie J., seven-

teen years old, table-girl.

March 20, 1894. Fell, striking right hip, ten days ago. Marked pain. Rest in bed. 28th, improved Extension, three pounds, applied. 30th, by rest. little pain.

April 5th, intense pain from knee to groin. 10th, some pain, extension eight pounds. 13th, extension ten pounds. Lateral traction. 19th, diminished redness of right hip. Patient has had very little pain since lateral traction, five pounds, was applied. 25th, no pain at all.

May 2d, no pain. Measured for splint. 27th, doing well; remains comfortable with weights as above.

Very marked relief from lateral traction.

In answer to the first problem, therefore, we find that a majority of these cases were distinctly relieved by lateral traction. Case IV seemed a little worse for it. Cases III, VIII and X are practically negative, as far as benefit is concerned. Case V probably was benefited.

A good many other cases at the Children's Hospital have been benefited by the application of lateral traction, but I think these cases, all of which have come under my own observation, are enough to establish the point. In general, lateral traction may be of use in relatively acute cases when pain or night-cries persist, after traction has been applied. It may serve to make some cases more comfortable, even though they have but little pain.

Treatment by lateral traction may be continued if necessary, as long as the hip is sensitive, by some

special lateral traction splint.

The answer to the second problem is, No; cases are not more comfortable with lateral traction alone. Case II was made decidedly worse by leaving off the end weight. Cases I and III showed no advantage in leaving off the end weight, and, indeed, it is hard to see, even on theoretical grounds, how there could be any advantage. For there would be nothing to counteract the spasm of the long flexor muscles.

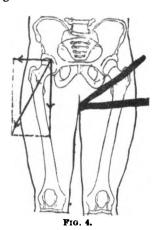
The third problem deals with the amount and limit of the traction.

Before discussing the figures in detail let us see what we expect traction to do.

The irritation of the roughened surfaces of the diseased joint causes a reflex spasm of the muscles, which drives the head of the femur upward and backward CASE X. Boston City Hospital, January 18, 1894. against the acetabulum. The object of traction is to

relieve the pressure of the opposing surfaces and to separate them slightly, or in other words, to produce distraction.

There is a limit to the amount of traction that can be applied, varying with the size of the limb, the kind of extension, and the sensitiveness of the skin; but a continuous force considerably less than this limit is usually enough to overcome the muscular spasm.



With sufficient traction the muscles gradually "tire out," and relax the spasm. Though they retain a certain amount of their normal tension and elasticity, yet they may lengthen appreciably, and will adapt their shape to the position of the limb.

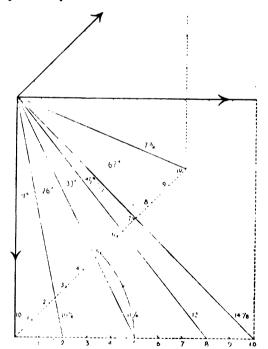


Diagram showing effect on a longitudinal force of ten, of a lateral force of from one to ten pounds applied at 90°,

When traction is applied in the axis of the limb, the head of the femur presses directly upon the lower edge of the acetabulum. In a young child, it can easily pass this, but in an adult it must first move outward in a line with the axis of the neck of the femur. We cannot apply a single force to act on the thigh in this sult might occur by leverage of the femur, — the line, but we can apply two forces whose resultant will short rotators acting as a fulcrum when a lateral

so act. By the aid of a well-known principle of physics called the "composition of forces," we are able to calculate exactly the direction and the intensity of the resultant force. For example, suppose a longitudinal traction of ten pounds and a lateral traction of five pounds applied at right angles. When these forces are represented by lines of proportionate length, the resultant is determined by the diagonal of the parallelogram made by the two lines and their projections. (See Figure 4.) In this case the resultant is eleven and a quarter pounds, and makes an angle with the longitudinal force of twenty-six degrees.

In order to show the possible effect of different amounts of lateral traction, I have made a diagram (Figure 5) showing the result of a lateral force of from one to ten pounds upon a longitudinal force of ten pounds applied at a right angle and also at forty-five degrees more than a right angle, as indicated in Figure 4. The results are shown in the following table. To find the result when the longitudinal force is different from ten pounds, it is only necessary to reduce the ratio between the lateral and the longitudinal to a decimal. The figures are approximate, and correct to the nearest degree and fraction of a pound.

Ratio, Lat. and Long.	Applied at 90°. Result. Applied at 135°. Result.						
Lat. and Long.	Angle.	Pounds.	Angle.	Pounds.			
.1	6°	10.05	40	9.25			
.2	110	10.25	105	8.75			
.3	170	10.50	160 _	8.25			
.4	22 °	10.75	220	7.75			
.5	26 °	11.25	290	7.33			
.6	31°	11.75	37 °	7.25			
.7	35 ○	12.25	45~	7.0625			
.8	39 °	18.00	52°	7.125			
.9	42°	18.50	60 °	7.33			
1.0	45 °	14.125	67	7.75			

The action of the muscles in modifying the traction is too complex to be stated accurately. It varies with each case according to the age and the muscular development. We are not able to estimate the force exerted by muscular spasm; it is probably a good deal more than any traction we can apply; but we are now considering the muscles are tired out by continued traction, as lengthened and moulded into shape by the position of the limb and the traction straps. Still, the muscles have some effect on the movement of the femur. There is resistance to the long pull and to the lateral pull, but the difference between the two is sufficiently small, it seems to me, to leave the result of traction as expressed in the table substantially correct within a reasonable limit of error.

The point of application of the lateral force to the femur is necessarily considerably below the head, but it is nearer the head when the lateral traction is directed upward. The objection has been raised that lateral traction applied close to the groin tends to shorten the abductor muscles and so draw the femur against the acetabulum. Also, that the same bad reforce is applied and the leg free to abduct. To the first objection we may answer that under the influence of continued traction the muscles become longer and shape themselves to the new condition. The second objection is not valid, if the leg is fixed by sand-bag or strap to limit the amount of abduction. Care must be taken, also, to keep the lateral traction-band in place.

From these somewhat theoretical considerations let us now turn for a moment to the weights actually used in the cases reported. By writing the lateral over the longitudinal, we get their ratios.

 $\frac{3}{8}, \frac{3}{8}, = .6, .75$ Case I. $\frac{2}{3}$, $\frac{2}{4}$, $\frac{2}{6}$, $\frac{3}{6}$, == .66, .5, .83, .5 Case II. Case IV. $\frac{2}{3} = .66$ Case VI. $\frac{2}{8} = .25$ Case VII. $\frac{1}{3}^{5}, \frac{1}{5}^{5}, \frac{1}{7}^{5}, = .5, .3, .21$ Case VIII. $\frac{1}{4}^{5}$, $\frac{3}{4}$, = .37, .75 Case IX. $^{8}_{13}$, $^{3}_{18}$, = .61, .16

Case X. $\frac{4}{10} = .5$ Case XI. $\frac{1}{10} = .5$

These seventeen ratios vary from .16 to .75, the average being about .50. They represent fairly the limits that are practical. Less than .10 or .15 would hardly be of any use, while more than .75 or .80 would not be needed. By using the ratio, we are able to compare the child requiring 1.5 pounds lateral and 3 pounds longitudinal with the adult requiring 10 and 15 pounds.

There remains the question of applying the lateral traction exactly at right angles to the longitudinal force or inclined upward. It cannot be applied downward because the band will slip. From the diagram (Figure 5) it is clear that the greatest amount of pull can be obtained by applying the lateral weight at a right angle. But the greatest change in direction can be secured by inclining the traction band upward twenty-five degrees for a ratio of five-tenths, and more when the ratio is larger.

For the fourth problem I have not made any special experiments. Dr. Bradford 2 has shown conclusively that the hip-joint is in the best possible anatomical position to yield to traction when the thigh is slightly flexed and abducted. If lateral traction is to be applied, the thigh should also be slightly everted. With the limb in this position, the limit of traction may be stated as follows:

- (1) Amount that can be made to hold on, that is, tension on skin.
- (2) Amount possible to apply. Strength of cord or splint, and skin. Skin of perineum.
 - (3) Muscular resistance.

 (4) Pain due to stretching capsular ligament.
 (5) Limit of usefulness. When the surface When the surfaces are distracted and held so, there is no need for further pull.

Experience at the Children's Hospital has shown that when a weight of more than ten or twelve pounds is applied, the adhesive-plaster extension slips down, and has to be renewed every three or four days. Also, that a heavy weight on a patient with sensitive skin will cause excoriation soover than a light one.

SUMMARY.

- (1) Lateral traction properly applied in connection with longitudinal traction gives relief in some acute
- ² Transactions American Orthopedic Association, 1893.

(2) Lateral traction alone has no advantage.

(3) The amount of weight in lateral traction should be in relation to the amount of longitudinal traction. A good proportion is five pounds lateral to ten longitudinal, applied twenty-five degrees beyond a right The minimum useful proportion is one to ten, the maximum eight to ten.

(4) The tension on the skin is the most important factor in limiting the amount of traction when the thigh is slightly flexed, abducted and everted.

NOTE.—In discussing this paper, Dr. A. M. Phelps, President of the American Orthopedic Association, said that about two-thirds of the longitudinal force applied is expended in moving the weight of the limb, so that one pound lateral traction is as effi-cient as three pounds longitudinal. Ordinarily, then, two and a half to ten would be a sufficiently large proportion to move the head of the femur in the direction of the axis of the neck.

Clinical Department.

A CASE OF ACNE ROSACEA HYPERTROPHICA, WITH OPERATION.1

BY F. B. LUND, M.D.

THE patient whom I have to present is an Englishman sixty years of age, a cabinet-maker by trade, and the subject of a chronic bronchitis. He has been a steady workman, and his indulgence in alcoholic stimulants has been limited to one or two glasses of beer a

About eight years ago his nose began to increase in size and grow very red. Marked venous engorgement is produced whenever he coughs, so that the condition is aggravated by the bronchitis. When I first saw him last December his nose had become a source of great trouble to him, and had given him a reputation, as unsavory as it was undeserved, of being a hard drinker. He has been unable to get work owing to the opprobrium attaching to his nose, and has even been refused board and lodging when he has been able to get work. He was willing to submit to any treatment which promised the slightest improvement in his personal appearance.

Early in January I operated, under ether and with careful antisepsis, by a method suggested to me by Dr. George H. Monks, who kindly saw the case with me.

A vertical incision was made in the median line, extending from about the centre of the bridge of the nose over the large globular mass which formed the end, and underneath about half way to the upper lip. Two thick, lateral flaps were reflected back about half the way to the cheek, and the subcutaneous tissues trimmed down with scissors nearly to the cartilages. A wide redundant edge was then trimmed off the skin flaps, and they were sewn together with fine silk worm-gut sutures. The flaps healed aseptically; but although great pains had been taken to prevent tension and ensure good circulation, a small portion sloughed, leaving a depressed scar. The removal of so large a portion of the end of the nose resulted in a decided rounding of the bridge, giving an undesirable profile.

About a month later, in order to correct this deformity, a boat-shaped piece was removed, under cocaine anesthesia, from the bridge of the nose, starting near the root of the nose, and extending nearly to the

1 Read at the Surgical Section of the Suffolk District, Wednesday, May 2, 1894.

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tip. By this incision, which extended down to the cartilage, the scar left by the sloughing flap was removed, and the bridge of the nose brought into the shape which you see in the second photograph.

After this had healed, two similar pieces were removed from the sides of the nose, the incisions being so placed that the linear scars lie in the alar grooves,

and as you see are hardly noticeable.

Although the man has a linear scar down the middle of the nose, the shape is very much improved. He is able to go among people without attracting attention, the chief disfigurement (the overhanging bulbous enlargement of the end) has been removed, and he is very much gratified with the result.

It is evident that the method of operating adopted in this case does not get rid of the disease, although the bases of the enlarged follicles are removed in tak-

ing the skin flaps.

It remains to be seen whether the cicatricial contraction resulting from the operation will prevent further

hypertrophy or not.

The operation of shaving off the hypertrophied skin and allowing the nose to become covered by granulation and cicatrization is said to have given good results.

Skin-grafting by the method of Thiersch is a method

which would seem to promise well.

The dilated veins which were superficially under the skin have been successfully treated in this case with the thermo-cautery.





December, 1893.

April, 1894.

The accompanying photographs show the patient's profile before and after the operative treatment, the first having been taken in December, 1893, and the second in April, 1894.

Reports of Societies.

NEW HAMPSHIRE MEDICAL SOCIETY.

ONE HUNDRED AND THIRD ANNIVERSARY MEETING, CONCORD, N. H., JUNE 18 AND 19, 1894.

PUERPERAL SEPSIS.

DR. J. ELIZABETH HOYT, of Concord, referred to an article in the *Medical and Surgical Journal* of June, 1893, by Dr. Edward Reynolds, who says that severe labor is not infrequently followed by moderate pyrexia, and when this is limited to the first forty-eight hours, it is strictly comparable with similar elevations counter-opening from the side where your compound puncture is and thorough drainage by tubes if possible. Often it is difficult to pass a tube; in such case make your opening so as to get a fairly free stream of water through the limb, and then tie a little cotton on the hours, it is strictly comparable with similar elevations

of temperature so frequently observed after surgical operations and is independent of sepsis. But when this pyrexia becomes aggravated or is even continued after the first two or three days of convalescence, or when, after a similar period of normal temperature, even a very slight elevation is observed upon the third or fourth or fifth day (or even later), a suspicion of the presence of sepsis should be excited.

Obstetric sepsis is characterized by elevation of temperature, abnormal tenderness of the abdomen especially localized over the uterus or its adnexa, diminution and foulness of the lochial discharge, diminution of the amount of milk, and frequently of all other secretions and excretions of the body. Dr. Hoyt re-

ported several cases.

DR. CONN, of Concord: I heard a portion of the paper by Dr. Reynolds and the discussion which followed it; and the discussion brought out this fact, that many of our medical teachers say that douches should not be given subsequent to the first twenty-four hours after confinement on account of the danger of carrying septic matter into the uterus.

DR. HILL, of Dover: I do not consent to that. I

think water ought to be used.

DR. CONN: It is considered better to use gauze, to use the curette, rather than carry the nozzle of the syringe through the débris that is in the vagina and introduce that into the uterus.

Dr. Hoyr, of Concord: If the irrigation is done through the speculum, and the vagina thoroughly washed out, I see no reason why foreign matter should be introduced into the uterus (if care is used), and no more so than with the curette.

DR. ADAMS, of Manchester:

UNUNITED FRACTURES.

When they are the result of lack of proper nourishment, from old age, long continued debility, or diseased bones, we can do but little to remedy them. When the result of syphilis, slight debility, or loss of blood, we can do much with proper internal remedies, the free use of iodine, rigid exercise, and the judicious use of the rubber mallet. In these cases the question of splints is often very perplexing, for when we have kept the limb perfectly still for from six to eight weeks with no union, if we remove the splints and give the limb its entire freedom, union often takes place. Usually the reaction following the injury is sufficient impetus to complete the cure; but this sometimes fails, while at other times it overshoots the mark. When it falls short a new impetus is demanded, and we get this from the use of the parts, the use of iodine, and the use of the mallet.

Cases of fractures ununited by reason of suppuration. Often the end of the bone when it penetrates the skin comes into contact with dirty clothes or skin, or dirt gets into the wound and causes suppuration in spite of antiseptic washing, and, like many minor injuries by machinery where the dirt is ground in, unless you sacrifice parts that are often of measureless value to the patient, you must take the risk of suppuration. Where suppuration does take place, I would advise a counter-opening from the side where your compound puncture is and thorough drainage by tubes if possible. Often it is difficult to pass a tube; in such case make your opening so as to get a fairly free stream of water through the limb, and then tie a little cotton on the end of a silk thread and pass it into one side with more

or less thread, and wash it through; then attach your tube and draw it through.

Cases of ununited fractures from the interposition of the soft parts. The surgeon cannot always remove the soft parts from between the ends, nor can he always tell whether he has accomplished it or not. Frequently the muscles are drawn very tense, and the bone may bend considerably before it gives way and the splinter may penetrate a fascia and muscle so that when the muscle relaxes and the bone straightens the bone has penetrated so deeply that it is impossible to release it without cutting down on it; and as one cannot always tell whether he has released the bone or not, no one would think of converting a simple into a compound fracture on uncertainties.

Lack of proper support ought nearly always to be avoided; yet in some cases we cannot hold our splints with bandages or straps, and the skin is so tender that we cannot use adhesive plaster, and plaster-of Paris is very unsafe, and some patients are so irritable and intractable that we can do but very little with them.

In operations nothing will take the place of coarse well-cromated catgut for fastening the bones together. It may be put in on all four sides, and it will do much to hold the bones in apposition.

TUBERCULAR BONES AND RESECTIONS.

The most frequent exciting cause is slight trauma that causes a subacute inflammation from the beginning, or one that is just sufficient to unbalance the pressure from within, and the contractile force of the capillaries, so as to cause a determination of blood to the parts and extravasation into the tissues and obstruction of the lymphatics, thus accumulating the tubercle bacilli that are floating in the fluids of the body. may affect nearly every bone and joint in the system, and it may appear in almost every form of bone and joint disease. These cases usually take place in what are commonly known as scrofulous subjects, or what we now know as tubercular subjects. Often by injecting iodoform into a tubercular focus in a bone it will effect a cure without resorting to more radical means. is best used in the form of a ten-per-cent. emulsion of olive oil or pure glycerine, and should be repeated about once in two weeks until a cure is effected.

A. Y., age fourteen, slipped and fell, striking the right hip on a stone. Pain and swelling gradually came on; and in about eight weeks we aspirated, and took about two ounces of a gelatinous liquid from the hip joint. Slight extension put on limb; iodine used over joint; cod-liver oil and tonics given; slow and steady improvement; at the end of ten weeks was dismissed well.

G. R., age three, about last March fell from chair, catching a foot in the rounds; wrenched ankle and injured lower end of tibia of right leg. In a few weeks a sore broke out a little above the ankle. Cut down, and found distinct tubercular focus, softening nearly all the cancellous tissue in the lower end of the tibia. Nearly all the cancellous tissue in the expanded portion of the bone was scraped out and filled with a ten-per-cent. paste of iodoform and lanolina, a large rubber tube inserted, and the external wound closed down. Through this tube olive-oil emulsion was injected about once a week, and syrup of the iodide of iron was given internally. Wound is healed and general health excellent.

E. F., age fourteen. A slight injury to hip began incision was then made, separating the soft from the

to cause her trouble a little more than three months previous to admission to hospital, July 27, 1892. At time of admission there were the ordinary symptoms of quite advanced hip disease. Placed in bed and extension applied, but in a short time an iliac abscess pointed at the notch between the anterior superior and inferior spinous processes of the ilium. clear, as hip disease with suppuration and perforation of the acetabulum and the internal periosteum, or peeling off of the internal periosteum and pointing at this Abscess opened November 5th, and fourteen ounces of pus discharged. Cleansed thoroughly and often, but it burrowed down the course of the sartorius about two-thirds of the distance to the knee in spite of antiseptic treatment. Lost flesh rapidly; became pale and anemic; pulse rapid, 100 to 120; temperature as high as 104°. Hip-joint resected February 8, 1893. It was cut down from the anterior aspect, the periosteum peeled back, the shaft sawed through three inches below the trochanter, and the upper portion removed. Found the acetabulum diseased; it was scraped and a portion of the rim with some of the ilium posterior to the acetabulum removed. Cavity packed with iodoform gauze and the external wound partly closed, leaving opening for introduction of Polk's uterine speculum, through which cavity was packed every second or third day with iodoform gauze, and about eight pounds extension put on. Rapid improvement in general health. Suppuration checked at once. Temperature soon dropped to normal; pulse steadily improved; cavity along the sartorius rapidly healed. Last May nearly healed; drainage-tube put in, through which it was daily cleansed until about July 1st, when it was allowed to close. Dismissed August 1, 1893.

RESECTION OF THE SUPERIOR MAXILLA FOR SAR-COMA.

Mr. U., entered hospital September 5, 1893. A tooth had troubled him for some time, which he had had extracted, and a few months following a growth projected down through the opening. This was removed; but in about three months it returned, while at the same time a tumor became apparent in the jaw above. Jaw removed September 7th. Patient on the back; an excision, starting a little below the inner angle of the eye, was carried down the side of the nose to the ala, thence around the median line and down through the lip. During this an assistant compressed the left facial artery and the upper part of the wound with a sponge, while a second compressed the coronary arteries at the two angles of the mouth. Then all bleeding vessels were secured. Then an incision was carried from the starting-point of the first horizontally outward along the lower margin of the orbit, nearly across the malar bone. The cheek flap was then dissected back, the head being inclined a little to the left to prevent the blood from entering the mouth. The bone was then sawed, commencing at the nasal cavity and sawing across the nasal process and just below the margin of the orbit nearly across the malar bone, thence down. The tumor impinging on the median line, we now sawed through the nasal septum into the right cavity nearly back to the soft palate; then beginning in front we sawed through from below backward just to the right of the septum, as far as the soft palate, leaving this portion until the very last on account of hemorrhage. A transverse

hard palate, and the bone was seized with strong forceps and wrenched from its position, cutting with scissors what few attachments remained. The head was then turned to the left and hot water used until the bleeding nearly stopped; then the cheek flap was turned back and sewed in place. Primary union and rapid recovery. This is usually considered a daugerous operation on account of blood getting into the airpassages; and tracheotomy has often been performed as a preliminary step, which is avoided by this method.

EXSECTION OF THE ASTRAGALUS.

Dr. Burns, of Plymouth, reported the following

W. B. was struck by a "shifter" locomotive backing down upon him; was thrown on his face, and the tender and most of the engine passed over him, November 10, 1892. Heart stimulants were administered until he rallied somewhat from the severe shock. There were several long scalp wounds; left arm hung, at about four inches below the shoulder, by a few crushed shreds of tissue and skin; bad fracture in middle third of left leg, which was comminuted for a distance of from four to six inches; astragalus of right foot fractured, and ankle distorted, forcing the foot into a marked position of varus. The arm was amputated just below the shoulder-joint, the scalp wounds dressed, and left leg put up in a strapped-pillow dressing - a safe protection where swelling is considerable and there is danger of fracture becoming compound. Manipulation and guarded force had no effect upon ankle. Patient's condition did not permit further surgical interference at this time. There was pressure over external malleolus, which was lessened by the application of splints. Next day splints were removed and cold applications made. On fifth day after accident incision was made just below external malleolus, the tendo-Achillis having been first cut subcutaneously. A large external fragment of the astragalus, almost wholly freed from its attachments, irregular in shape and rotated upon its axis in such a way as to render replacement absolutely impossible, was easily removed. On the inner side of the foot were found several small pieces of bone, and also a large irregular fragment, the longest diameter of which was antero-posterior, firmly bound to its normal position. The ligaments were so strong that an incision was made on the inner side of the foot, and the attachments severed before removal could be effected. Thorough antiseptic irrigation; heavy baked-gauze dressings applied, with side-splints. Following the operation was but slight pain or inflammation, though ultimately a large slough formed, owing to the nature of the injury and the tension over and below the external malleolus. When the slough separated, the joint was left freely open. In about two months the joint had closed and the wound had granulated, so that a Thiersch skin-grafting was done. As soon as advisable light plaster splints were applied, a fenestra being cut for irrigation and application of dressings. To-day the patient is walking about attending to his work. Cutting the tendo-Achillis simplifies the operation, and prevents spasm and contraction. The removal of the bone through one lateral incision may not be easy in all cases, unless a second lateral incision is made, which also permits more effective multiple injuries in this case and the satisfactory result the free use of sulphate of magnesia. If there be al-

obtained, where the deformity is considerable and fracture irreducible we may fairly expect a useful

DR. CONN, of Concord: I saw the case just reported, and was pleased with the result. I think it is the best treatment for such cases. It is easy enough if you have a fracture of the astragalus, but a fracture with dislocation is another thing. In such case, where one or more fragments of the astragalus are turned completely over, the attachments nearly all severed, I believe it is impossible to return the pieces back into their places, even after you make incision. The only thing to be done is to remove them; there is left sufficient motion of the ankle for walking, and it is much better than a wooden leg.

Most cases of fracture with dislocation are from railway accidents, and other injuries generally complicate the case, from loss of blood and the greater danger of collapse. In this case it was necessary to operate on the arm at once, and the depression was so great that it was inexpedient to go any further the first day. The patient was left until reaction had taken place and the wound made in the left arm had probably substantially closed in.

PROF. SMITH, of Dartmouth College: leaning over to pick up a st ck threw his foot up, and his ankle came on a saw, so that the edge of it took off the lower end of the internal malleolus, cutting off two tendous and the posterior tibial artery, clear into the joint, so the articular surface of the astragalus could be seen. The artery was tied and the wound washed thoroughly. There was the usual amount of saw-dust, dirt and other things ground in. We tied the tendons together; and after using antiseptic solutions freely, we sewed the wound up tight, covered it with gauze and put it in splints. There was no rise of temperature. In four or five days the dressing was removed, and there was no pus. Treatment continued. After a time he was put in plaster. In about two weeks the wound completely healed, and the prospect is that he will have a good ankle.

EMPYEMA.

DR. LYONS, of Manchester: In the tubercular form thorough tonic and hygienic treatment is most likely to prove successful, especial care being given to the nutrition of the patient.

In the stheuic forms, the pain, which is often intense, demands morphine, and when practicable it is best given hypodermically. Dry cupping is often a useful adjuvant, and in the milder cases may suffice We know that accompanying the rheumatic diathesis there is a strong tendency towards inflammation of the various serous membranes. In such subjects we would do well to try the effect of large doses of salicylate of soda. Not many of the older practitioners would discard Dover's powder for the modern autipyretics. Care should be taken that the skin and kidneys do not fail to properly perform their functions; and here the time-honored remedies are as reliable as

A serous effusion has frequently been converted into a purulent one by tapping, even when the strictest precautions are taken to avoid infection. Therefore, if an effusion is not causing urgent symptoms, and is not inirrigation. One of the cuts should be allowed to heal creasing too rapidly, we should strive to accomplish by first intention. When we consider the severe resorption by such means as repeated blistering and ready a purulent effusion the only proper treatment is

opening and thorough drainage.

When the operation should be performed, whether irrigation is necessary or lawful, whether it is necessary to remove a portion of the rib, which is the best place to make an opening, and whether more than one opening is necessary, are questions to be answered only by considering them in relation to each particular case, bearing in mind that the opening must be free and the drainage thorough.

LACERATION OF THE CERVIX UTERI.

Dr. Stillings, of Concord: Many troubles arise from this accident, some of which are very grave in their consequences. This disturbance of the functions of the sexual organs, and the general health, is usually marked.

The injury causes the uterus to remain large, giving a sense of weight to the pelvis. In many instances much cicatricial tissue results, and generally there is enlargement and hardening of one or both lips of the The dragging of the scar tissue causes local irritation and frequently general disturbance through reflex action. Inflammation of the cervical mucous membrane develops, the parts are bathed in a stringy catarrhal flow, the cervix becomes edematous, and the divided walls become everted and are constantly irritated by friction with the vaginal wall and its acid secretions. This condition is extremely obstinate. The application of strong caustics early in treatment, while checking the catarrhal flow at first, sears the mouths of the mucous follicles, and they become closed and distended, giving a lumpy appearance. As the follicles become more distended, they cause absorption of the cervical tissue, while giving a bulbous look to one or both halves of the divided cervix.

The os is so dilated and distorted after delivery, that it is difficult to determine that laceration has occurred; and if the tear were found, it would be difficult to decide how much of the cervix should be closed, to say nothing of the improbability of getting union while the lochia are bathing the parts. First secure involution of the uterus by means of uterine massage, daily douches of hot water, and the application two or three times a week of glycerine tampons; and sometimes it can be much hastened by curetting its interior thoroughly with a sharp curette, washing out the cavity with a mixture of creolin tincture, green soap and water. It is important that the surface be left smooth, not plowed into furrows. I prefer the following method of operating: The patient on her back, hips brought to the edge of the operating-table, thighs flexed on abdomen and held there; field of operation thoroughly cleansed with the soap and creolin mixture above referred to. After the speculum and retractors are in position, the tenaculum forceps are inserted, one into the anterior and one into the posterior lip, taking care to place them so that they do not embrace any of the tissue it is desired to remove. Drag down the uterus as far as it will come, and approximate the several portions to as near the normal positions as possible, in order to determine the amount of tissue to remove. Give the anterior forceps into the hands of an assistant; introduce the hawk-bill scissors up to where the these three points: Curetting previous to any operpoints will engage the upper angle of the rent. Draw the anterior and posterior lips together closely with little tissue as possible in all recent cases, and the the forceps, that the scissors may grasp as long a strip thorough removal of degenerated tissue in cases of of the cicatricial tissue on each side as possible. The long standing.

hawk-bill scissors always make a clean cut at the upper angle, but the lower ends of the divided cervix are apt. to roll out from between the blades and leave the lower portion of the rent uncut. This may be finished with straight or curved scissors, but many prefer the knife, with which a smoother cut can be made and the work done more quickly. It is desirable that all the cicatricial tissue be removed and the lines of incision be as straight and smooth as possible. Do not remove too much tissue or notch the inner edge of the incisions, lest the cervical canal be made too small. Dry the cut surfaces with mops. Introduce the sutures from behind forwards, beginning at the lower end, the parts being held exactly in apposition with the tenaculum forceps. Continue the sutures to the angle of the wound, each being drawn tightly with a knot-tier; and after all are in position cut the ends short, if silk is used, but if the wound is closed with silk-worm-gut leave the ends long to prevent chafing the vaginal walls. Remove the forceps and stop the bleeding of their punctures by dry sponging and exposure to the air, or by touching the bleeding points with very hot water. Douche the vagina thoroughly with hot water, wipe dry the edges of the wound and the vagina with mops, and place on the wound, and, if possible, surround the cervix with finely powdered salacin. the cervix on all sides with small tampons, and place one or more large tampons in the vagina. Keep the patient quiet in bed. If there is no discharge, or it is slight, do not remove the packing until the third or fourth day; and if there is then apparent union, one or two of the upper stitches may be removed, and new salacin and tampons applied, and after two or three days longer the remaining stitches may be removed.

I had a case recently where there were four lacerations. After operation one did not unite. As considerable tissue had been sacrificed, I determined to operate without cutting away the edges. I anesthetized the parts with cocaine, and with a small triangular knife split the two sides of the rent to the depth of a little more than an eighth of an inch. I then entered a suture at the end of the cervix just outside the bottom of the wound, carried it up to the angle, dipped it into the opposite side and brought it down and out at a point corresponding to its entry. Making traction on this caused the split edges to bulge and brought the two raw surfaces together. I tied this moderately tight, and united the edges with fine superficial stitches. The parts firmly united.

Dr. Adams, of Manchester: I have adopted a little different method of operating. Often when we have a double laceration laterally, we find that the anterior and posterior lips are both greatly hypertrophied, and by cutting with the hawk-bill scissors at the angles and then by cutting out the sides, leaving the mucous strip down through the middle, we find it very difficult to bring the two edges together. I have adopted this plan: Leave a mucous strip in the middle of the anterior lip, and cut the posterior lip right straight across, taking all the mucous membrane off. Then it adapts itself to the auterior lip very much easier, and I never have had any trouble in getting union.

DR. RUSSELL, of Concord: I would emphasize ation for the repair of the cervix, the sacrifice of as

PINK EYE.

DR. CARVELLE, of Manchester, read a paper "On the Importance of the Early Recognition of Certain Diseases and Conditions of the Eye by the General Practitioner, with Suggestions regarding their Management." It is the fashion to call every eye that is red "pink eye," which is equivalent to saying that it is not a serious thing and does not require any attention. The term should not be used. It is applied to cases of acute catarrhal conjunctivitis, which is characterized by redness, and swelling of the conjunctiva of the lids and eyeball, and accompanied by more or less mucopurulent secretion. Both eyes are usually attacked, the second eye from twelve to twenty-four hours after the first one. There is no pain or tenderness of the eyeball, the pupil reacts to light and shade, and the vision is not disturbed.

GLAUCOMA AND IRITIS.

Glaucoma and iritis are often mistaken for neuralgia by the general practitioner, and in too many cases the patient is hopelessly blind before he discovers his error. Bear in mind that neuralgia is not accompanied by any disturbance of vision or inflammation of the eye, while in glaucoma and iritis there are marked characteristic symptoms peculiar to each disease. They both have pain in and around the eye, but in iritis it is more in the brow, while in glaucoma the pain may be more severe on the side of the nose or in the temples. The pupil in glaucoma is large, while in iritis it is small and immovable. In iritis the eyeball is tender, and the tension is usually normal, while there is not always tenderness of the eyeball in glaucoma, but the tension is increased. In iritis the sight becomes blurred after a few days, while in acute glaucoma vision may be lost in twenty-four hours. If a patient beyond middle life is taken suddenly in the night with severe pain in and around the eyes; with nausea, and disturbance of vision; if the pupil is dilated and immovable and the tension of the eyeball increased, you may be sure that it is glaucoma and nothing else.

ERRORS OF REFRACTION.

Many who have vainly tried every kind of headache remedy are relieved by having their refractive error corrected. It is the exception to find an optically correct eye; and under the pressure of our school system, and in the struggle for life, it is often necessary to correct even the smallest muscular and refractive errors. I have had four cases of epilepsy in young people whose fits have been stopped by correcting their refractive errors. It should be done only by the ophthalmologist, and in young people only after a mydriatic has been used, and not, as is often done, by ignorant opticians and itinerant peddlers of spectacles. If a patient complains of headache, poor sight and pain in the eyes, the probability of a refractive error being the cause is now generally recognized; but if the sight is normal, and there is little or no discomfort in using amination and history of waters so pure at their source. the eyes for near work, and if the headaches are not frontal, an ocular defect as a possible cause does not usually receive much consideration. It is, however, a fact that many who have good sight for distance and near, and are able to sew for hours without discomfort, suffer from neuralgic headaches that are relieved by the correction of some refractive or muscular defect. I would advise all cases of chorea, epilepsy and habitual headache to have their eyes examined.

POTABLE WATER.

PROF. EDWIN J. BARTLETT, of Hanover, described in detail the different methods of water analysis.

There is no absolute standard of chemical results upon which all waters stand or fall. A chemist may condemn a water for some purposes and approve it for others. He may say this water is too filthy to use. He may say, from previous examination, this water is far below its usual condition; or this water is much inferior to similar waters of the region; or this gives strong evidence of excessive vegetable matter, or even of sewage pollution. He cannot say this water does or does not contain the germs of disease; his methods do not touch this question. The biological methods go farther and repeated examinations accomplish valuable results. But they do not permit the statement from a single sample that no pathogenic germs are in the water-supply.

The methods of water analysis are very delicate, and the most absolute cleanliness in the sample is essential. Samples taken by the unskilled are seldom fair. Samples taken at different times are often very unlike.

Chemists have not the same competence; but even when they have, there is a reasonable margin of variation from different samples and a considerable margin from differing methods which may be equally correct. It is important, therefore, that the chemist should state his methods of work. Usually there is a distinct disadvantage in sending to different chemists; if neither is honest or competent, the results are worthless any way. The repetition of analyses in the same laboratory with the same reagents, methods, and personal equation, gathers value in going, while scattered results bring doubt and confusion.

The chemist employed should be trusted. It is a common notion that the less he is informed about the matter in question the more honest and reliable his data will be. He would have little cause to complain of this if the public were content with data; but they ask for a professional opinion in addition. That is, he is to throw away all his knowledge and experience and breadth of vision, and hazard his reputation on a guess; because his data commonly do not touch the question of the absolute healthfulness of the water. Every possible source of knowledge is desirable; and it is the duty of the chemist either to give no opinion, or to make it clear that his opinion does not go outside of his analytical data, which can tell him nothing about cholera or typhoid fever or diarrhea or any other disease.

The historical, comparative, systematic study of potable water is of great benefit and importance to a community. The States of Vermont and New Hampshire, with their throngs of summer visitors, their superb water sources, their frequent epidemics of typhoid fever, would be greatly benefited by elaborate modern study; and the world would profit by the ex-

Other papers presented were "On the Prevention of Communicable Disease," by Dr. Sullivan, of Concord, N. H.; "Sleep, How Best Induced in Certain Pathological Conditions," by Dr. Raynes, of Lebanon; "Retrospective Glances," by Dr. Straw, of Manchester; "On the Differential Therapeutics of Strophanthus and Digitalis," by Dr. Wadleigh, Hopkinton; "On the Pathology and Methods of Treatment of Hypertrophic and Atrophic Rhinitis, with Especial Reference

to the Work of the General Practitioner." by Dr. Albert Pick, of Boston; "Glimpses of Fifty Years in the Medical Profession," by Dr. Kelley, of Plymouth; "On Sanitation in Mexico," by Dr. Conn, of Concord,

Dr. David P. Goodhue, of Springfield, was elected President; Dr. G. P. Conn, of Concord, N. H., Secretary; Dr. M. H. Felt, of Hillsboro Bridge, Treasurer.

Hereafter the annual meetings of this society will be held Thursday and Friday of the last week in May.

INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

BUDAPEST, SEPTEMBER 1-9, 1894.

THE Eighth International Congress for Hygiene and Demography met at Budapest from September 1st to September 9th. It was largely attended, there being about 600 in the sections for Hygiene, and about 200 in the section for Demography. Among the number were many English and Americans.

Of special interest in the general discussion was the question of the sanitary condition of the great cities of the world and a comparison of mortality-rates. In Budapest, in 1893, the mortality-rate per 1,000 was but 14.459; whereas, in 1874, it was 40 per 1,000.

The Congress was opened on the 1st by the Archduke Karl Ludwig, the representative of the emperor; and then followed immediately an act that is of world-wide interest, the formal homage to one of the greatest sanitarians, Ignatius Phillipus Semmelweis. The whole Congress in a body assisted at the unveiling of a monument over his grave, and Dr. Prof. Ferdinand Hüppe delivered an oration on the life of Semmelweis and his efforts to establish the fact that puerperal fever was caused by lack of attention to cleanliness and antisep-

sis on the part of the attendants.

Semmelweis was born in 1818 at Buda. He was graduated in medicine at Vienna in 1844, and took up midwifery as a specialty. In 1846 he was appointed assistant in midwifery to Dr. Klein at Vienna. Puerperal fever was at that time very rife in this department, the mortality being seldom under 5 per cent., while during one period of twenty months (1841-43) it had been 16 per cent. Many expedients were tried to alter this state of things, among them the division of the department into two clinics, one under Dr. Klein where students alone were taught, the other in which midwives were trained. The mortality was found to be much greater in the former than in the latter - 9.27 to 8.38 per cent. Dr. Klein's clinic was also removed to another building, but without avail. The high rate of mortality had a very deep effect on Semmelweis, and caused him to set to work to discover the "mysterious cause." He noticed that the seasons of the year had no very appreciable effect on the mortality, and that women delivered outside the clinic in Vienna and the neighborhood had a much lower percentage. Semmelweis, therefore, came to the conclusion that the cause must be local; but before he could make further investigations he was called upon to resign his post in favor of a senior, being, however, soon re-elected for a term of two years. About this time his friend Koletschka died from pyemia following a dissection wound. Semmelweis compared the symptoms which led to this death with those of puerperal or orange concentric rings.

fever, and came to the conclusion that the latter, like the former, were caused by decomposing animal matter, which he traced to the hands of professors and students, who were often summoned from the dissecting-rooms to do duty in the clinic, and merely washed their hands hastily with soap and water, thus conveying particles of decomposing animal matter on the skin and under the nails directly to the genitals of parturient women during examination.

Convinced of the correctness of his views, in May, 1847, Semmelweis ordered that the hands of all those making examinations should first be washed in chlorine water, and the death-rate fell in six months from 12.24 per cent., to 3.04 per cent. He also noticed a series of eleven fatal cases of puerperal fever occurring in twelve women who had been examined directly after a case of cancer of the uterus, which confirmed him in the correctness of the conclusion that "not only do particles from dead bodies set up septic fever, but also any material in a state of decomposition proceeding from a living organism."

Semmelweis, aided by the encouragement and cooperation of many eminent men - such as Rokitansky, Skoda, Hebra, and Helm in Vienna, Michaelis in Kiel, Tilanus in Amsterdam, and Arnett in Paris — roused the interest of the profession all over Europe. long as Semmelweis was content to work in a subordinate position as an assistant, he was left undisturbed in his efforts at improvement; but when his views became a topic of public attention, not only he, but his friends, especially Skoda, became objects of malevolent

attacks, particularly in Vienna.

Semmelweis died August 17, 1865. The cause of his death was pyemia, the very disease to the study of which he had given the best years of his life. He had performed an operation on an infant and wounded his right hand, which was followed by a whitlow; pyemia and death ensued. In 1890, at the instance of his relatives, the remains of Semmelweis were removed to Budapest and reinterred there amid manifestations of universal sympathy and respect.

On the last day of the Congress, a long list of resolutions were submitted, causing great confusion owing to the linguistic difficulty. Often the recommendations of the resolutions were not printed nor translated, and there was nobody present to explain or defend them. Dr. John S. Billings of Washington protested against the general adoption of resolutions which were imperfectly understood. After considerable confusion his position was sustained by the Congress.

Madrid was selected as the place of meeting for the next Congress.

A NEW TEST FOR MORPHINE.— The Presse Médicale for July 28th, publishes an abstract of a note on a new reaction by morphine, by M. Lancal, published in the Bulletin de l'Académie de Médecine de Bruxelles for May 26th. This reaction is said to reveal the presence of morphine and oxymorphine in a solution of the strength of 1 to 20,000. A few drops of the liquid to be examined are placed in a porcelain capsule, and then there is to be added an equal volume of a solution of thirty parts of uranium acetate and twenty parts of sodium acetate in 1,000 of distilled water. The mixture is then to be evaporated over the water bath. If the liquid contains morphine, there remains a prominent deposit in the form of brownish-red

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ANNUAL REPORT OF THE BOSTON CITY HOSPITAL.

THE Annual Report of the Trustees of the Boston City Hospital shows that the existing accommodations are insufficient for the amount of work which is done by this institution; but that this overcrowding is soon to be relieved by the new buildings and extensions already approaching completion, although additional room may still be needed for medical cases and special diseases. The two wards for contagious diseases were full at all times and during a large part of the year excessively crowded, a condition which seriously hindered the proper care of patients and affected the health of the nurses and house-officers in that service. The epidemic hospital on Swett Street, which had been erected two years ago at the time of the threatened invasion of cholera, was turned over to the hospital, by which 32 extra beds were acquired for scarlet-fever patients. A serious complication in the proper isolation of contagious cases arose from the fact that a very large number of patients were admitted suffering from more than one contagious disease at the same time; 101 patients having both diphtheria and scarlet fever. The Trustees congratulate themselves and the citizens of Boston that before the close of the present year the new hospital, exclusively for contagious diseases, will be completed and occupied, after which time no cases of contagion will be received into the general hospital. The buildings consist of an administration building, a domestic building, a lodge or entrance, two two-storied wards, two nurses' homes, a laundry building and a mortuary building. The hospital will have accommodation for 250 cases of contagious disease.

Among other new buildings for which plans have already been made is an enlargement of the present surgical operating building, which will be practically doubled in size. There will be five accident-rooms, small wards and other rooms so arranged as to make it possible to properly and promptly care for all cases

that naturally come to an operating-room. It will then not be necessary to take moribund cases to the general wards on entrance, nor accident cases in the middle of the night. There will also be built two two-storied surgical wards in addition to the present accommodations. Plans are also ready for a group of three buildings to embrace the pathological building, mortuary and mortuary chapel. This building will contain seven laboratories for scientific work, with accessory rooms for special surgical work. The mortuary building will contain special rooms for the medical examiners' cases. The additional buildings will give an increased capacity for 388 patients, making 850 beds available for the hospital.

The report of the superintendent shows that 8,292 patients were admitted during the year, of whom 3,525 were medical, 3,172 surgical, 890 contagious, 562 gynecological, and the remainder in special services. The number of accident cases received was 1,495, the daily average in the wards 457, an increase of 24 over the previous year. The total number of deaths was 1,153, of which number 447 died within forty-eight hours of admission, and 203 of diphtheria. Solely for want of proper accommodations in the hospital, 428 persons had to be rejected.

The weekly cost per patient averaged \$10.09, while the average stay of patients in the hospital was 19.05 days. The growth of the hospital and the improvements in various departments during the last few years are striking and promise to become even more so in the near future.

IS OUR RACE DEGENERATING?

It has been asserted that modern nations are degenerating; that decadence is stamped on the constitution of the races of to-day; that the high-pressure conditions of life are so exacting that the race must inevitably deteriorate, and the fate which befell all the ancient civilizations is sure, soon or late, to befall our civilization. The people of this century, it is said, are neglecting those means of physical robustness which made the men and women of earlier times healthy; while the brain is overstimulated, and the nervous forces overstrained so that exhaustion and decadence are inevitable.

Dr. Percy Dunn, in the last number of the Nineteenth Century, has taken a more cheerful view of the situation. He admits that the conditions of present-day life among civilized peoples are not precisely those which can conduce to a high standard of health, but he doubts whether they lead to any deterioration of race which calls for alarm. Nature is always apt at adapting herself to circumstances, and whatever calls may be made upon her resources, so far as man is concerned, in the altered circumstances of his existence, she can, as the past has shown, prove herself equal to the occasion. He asks the question: "Is the dawn of the twentieth century bringing with it new diseases, new complications of existing maladies, new varieties

of physical suffering, as the result of the exacting conditions of the present struggle for existence?" He answers emphatically, No! There is no evidence to show that the normal life of any individual organ of the body in which organic disease most commonly occurs is shorter now than the records would indicate was the case in earlier days. In other words, it is shown that the organs of the body can bear the strain of present-day life without prematurely becoming the seat of organic mischief. He reminds the reader that hysteria, hypochondria and neurasthenia, in respect to the alleged increase of which so much stress has been laid, do not belong to the category of organic affections. The same may be said of what is known as "nervous-All these latter forms of human ills are merely disorders of function. There is no pathological condition, for example, associated with "nervousness" - so called. Often this psychical disorder is an inherited one, a fact which is commonly illustrated in certain families. When acquired, it tends to be only of temporary duration, and can be recovered from. "Nervousness" perhaps is largely the result of habit. But in all cases, it may be said to be harmless — harmless, that is to say, in the sense of not provoking the development of organic disease. Discomforting it may be to the individual who suffers from it; but whether the increase, as it is alleged, of "nervousness," hypochondria, hysteria and neurasthenia should be taken as indicating the advent of the decadence of the human species and regarded as worthy of being made the basis of a profound pessimistic doctrine is at all events open to serious doubts.

Dr. Dunn thinks that the explanation of the fact that the civilized races of mankind are not "falling to pieces" in physique in consequence of the severe high-pressure conditions of life is to be found in the phenomenal improvement which has been effected in the sanitary, hygienic, and perhaps social environments of the people. Obviously, that which conduces to human health must also conduce to human energy, and out of the human machine that is in a good state of order, more work may be expected than out of one the surroundings of which are not favorable to the development of its best features.

With regard to degeneracy from the effects of "the great town system" to quote from Dr. Morel, whose chief elements are unhealthy situation, noxious local and general atmosphere, insufficient and improper nourishment, deleterious avocations, moral and social misery, wretchedness and crime, the writer makes some judicious remarks. It has, he says, been repeatedly pointed out and universally accepted as a truism that the herding together of large communities of people in towns is associated with the worst effects upon the health of the population. In support of this statement, statistics show that there is a marked difference between the urban and the rural death-rates; in other words, the former is distinctly higher than the latter. The point, however, to be inquired into in this connection is, Can it be asserted that the higher mor-

tality of town districts is necessarily associated with race deterioration? Is it true that the effects of the "great town system" are to cause deterioration of the race as the result of which a high rate of mortality follows? There are undisputed facts on record which practically prove the contrary. The following is an extract from the report of the Anthropometric Committee of the British Association which will be found in the volume of the Proceedings of the Association published in the year 1888.

PHYSICAL IMPROVEMENT OR DEGENERACY OF THE POPULATION. — Few statistics are in existence which help to throw light on the subject. It is generally believed that the population in the manufacturing towns of the North of England is rapidly degenerating, but a comparison of the measurements of stature and weight given in the report of the Factory Commissions of 1833 and in the report to the Local Government Board on "Changes in Hours and Ages of Employment of Children and Young Persons in Textile Factories," 1873, shows that this is not the case. On the contrary, an examination of Table XXIV, showing these measurements, indicates a slight but uniform increase in stature, and a very large increase in weight at corresponding ages. The increase in weight amounted to a whole year's gain, and a child of nine years of age in 1873 weighed as much as one of ten years in 1833, one of ten as much as one of eleven, and one of eleven as much as one of twelve years in the two periods respectively.

This is perhaps the only instance in which a trustworthy statistical inquiry has been undertaken, and the results are such as to accord with the view that no racial deterioration is in progress. In time it may be that more figures will be forthcoming to testify to this fact, but meanwhile it is obvious that the discussions on this subject must to a large extent be based on mere speculation.

DEATH OF PROFESSOR VON HELMHOLTZ.

As will be seen from the letter of our correspondent, the scientific world, the medical profession, and every civilized community has suffered an irreparable loss in the death of one who was among the first of the distinguished men of this age. Few among the most eminent men of science, or of our own profession, have made such important contributions, not only to science, but to human welfare as Helmholtz has done in his sagacious and accurate researches, especially in physiological optics; and in the priceless endowment he has made us of a practical and simple instrument for exploring the interior of the eyeball inestimable, not only for its revelations and demonstrations of the normal physiological conditions and functions of its deeper-seated structures, but as, moreover, affording what had seemed to be impossible revelations as to the nature and the course of hitherto unsuspected morbid processes, and of the resultant changes in structure and functions; thus opening a new field for physiological and optical research, and disclosing what is virtually a new world for opthalmology, not only in showing important local changes, but in demonstrating the existence of grave and progressive conditions affecting the whole system in advance of any other means of diagnosis.

The almost feminine modesty of Professor von Helmholtz had not prevented a recognition of his merits, as shown in his advancement from professorships in minor universities to those of higher distinction, notwithstanding his lack of self-assertion. It may, indeed, be said of him, "His works do praise him"; and he will long be held in affectionate remembrance by those who had the privilege of a personal acquaintance.

MEDICAL NOTES.

THE CHOLERA. - Since the last week of August there has been a marked spread of the disease, especially in Austria-Hungary, Germany and Holland. It may be said that cholera has shown a power of recrudescence in Russia, Galicia, Northeast Germany and Holland, which is greater than could have been expected, and in excess of that which obtained last year. It is extremely difficult to obtain reliable information from France or Belgium. In France, for example, Marseilles has for some time past been under suspicion, although the existence of cholera is strenuously denied by the authorities. Late last week a fatal attack occurred at Bordeaux in a person who had come from Marseilles within the previous forty-eight hours. Marseilles must be regarded as a place where cholera is existing, especially as most of the ports of the Mediterranean have now quarantined against it. In Austria Hungary the spread of the disease during the past ten days has been very great in Eastern Galicia, along the river Zebrucz and in Bukowina. In the week August 27th, September 3d, there were 801 deaths from cholera in Galicia and Bukowina. Since the disease became epidemic there have been 6,958 cases of cholera, and 3,000 deaths in those provinces. In Germany, cholera has spread along the Vistula. Centres of infection have been established near Dantzig and Johannesberg and isolated cases reported at Berlin, Bremen and Cologne. It is a question, now, as to whether the Rhine is infected. Certain it is that cases have occurred on Rhine steamers. In Holland, there has been a small epidemic at Maestricht, in the province of Limbourg, while many cases are reported in various towns in both North and South Holland. In France the disease is only termed cholerine, but this has been reported at Paris, Marseilles, Bordeaux, Sassey, Mancel-sur-Scille, Avignon, Rheims and Reuil. Officials of the Marine-Hospital Service display undisguised anxiety as to the continued spread of cholera in Europe and fear that the United States may not be able to escape unless strenuous precautionary measures are taken at every point.

RESTRICTION OF PILGRIMAGES TO MECCA. — The crowds of pauper pilgrims who annually flock to Mecca have long been known to be one of the most potent causes of the spread of cholera. The last number of the Indian Medical Gazette discusses this question,

governments of England and France will unite in restricting all pauper Moslem pilgrims from entering India.

STATUE OF DR. SIMS IN NEW YORK. - A statue of the late Dr. J. Marion Sims is shortly to be erected in Bryant Park, New York. The well known French artist, M. Dubois, is the sculptor.

OPIUM SMOKING IN NEW YORK. - According to the testimony of one of the police before the Lexow Committee in New York there are about ten thousand opium smokers in that city.

THE PLAGUE IN LONDON in 1664, which is believed to be identical with the present epidemic in China, caused 69,000 deaths out of a total population of 460,000.

THE MEDICAL OFFICER OF HEALTH TO THE CITY OF LONDON receives a salary of \$7,500, and an additional sum of \$1,000 as analyst; but he is obliged to give his whole time to the duties of the office.

MEDICAL SCHOOLS OF THE UNITED STATES. — The last two numbers of the Progrès Médical have a long and elaborately illustrated article on the medical schools of the United States. Much space is given to the Universities of Harvard and Yale. The fact that there are so many small medical colleges throughout the country is greatly deplored as tending to diminish the value of American degrees in general.

ANTHRAX IN LONDON. - During the past twenty years 118 cases of anthrax have been reported to the sanitary authorities in London. Of this number, 90 were in persons engaged in the hide and skin trade, 5 in persons engaged in slaughtering animals, 7 in persons engaged in the manipulation of horsehair or the manufacture of brushes, one was employed at a bacteriological laboratory, while in 15 instances the source of infection was not traceable.

FATAL ALCOHOL POISONING IN A CHILD. -Battrich in the Jahrbuch für Kinderheilkunde mentions the case of a boy nine and a half years old who drank a quarter liter of whiskey. This was shortly followed by dizziness, loss of consciousness, and convulsions, which were chronic in character, involving the extremities and the muscles of the face. The pupils were contracted, the head hot, the trunk cool, the pulse slow. The convulsions subsided, but were followed by pulmonary edema, high fever, and extremely rapid respiration, and death in three days.

HABITATION AND OCCUPATION IN THEIR RELA-TIONS TO THE MORTALITY OF TUBERCULOSIS. - M. Lagneau, in comparing various European statistics, concludes: (1) That occupations exposing to dust cause a marked predisposition to tuberculosis, the mortality of stone-cutters, according to Swiss statistics, being 10 per cent. (2) Sedentary occupations predispose to the disease more than any others. Students and seminarians, according to Italian and English statistics, show 459 deaths per 1,000 from the disease. I states that there is a strong probability that the (3) Printers in England and lithographers in Italy

show from 300 to 400 deaths per 1,000. (4) On the other hand, individuals living in the open air, as mountaineers, farmers and boatmen, enjoy almost complete immunity from tuberculosis; Swiss statistics show a mortality among them of only 1 to 2 per 1,000. As regards habitation, the sanitary statistics of 662 towns in France prove that the more dense the population, the greater the spread of tuberculosis.

STATISTICS OF GERMAN MEDICAL STUDENTS.—
The number of medical students enrolled at German universities in the spring and summer of 1894 was 8,012, of which 4,505 were Germans and 3,507 were foreigners. This proportion of German to foreign students it is said remains about the same each year. Munich had the largest number of students, 1,211 and Berlin came second with 1,059. The least favored universities were Giessen and Rosbloch. Munich and Wurzburg were especially frequented by foreigners.

PERITONITIS FOLLOWING MUMPS. — The Archives de Médecine et Pharmacie Militaires, gives this rare case. During an epidemic of mumps a soldier, twentytwo years old, presented himself with a double orchitis. It was not due to gonorrhea, and he had never had the least venereal infection. It had come on after a few colicky pains followed by an abundant movement of the bowels. Both testicles were affected in an equal degree. The temperature was 103.1° F. Topical treatment was prescribed for the orchitis, but as early as on the second day it was found that the patient had peritonitis, which resulted fatally in forty-eight hours. At the autopsy the testicles were found transformed into purulent collections with no trace of seminiferous tubules. The spermatic cords were bathed in pus, which continued beyond the inguinal canal. The intestinal coils and the mesentery were covered with purulent and fibrinous deposits.

MEDICAL WORK AMONG THE WOMEN OF INDIA. -The ninth annual report of the Lady Dufferin Fund for Medical Aid to the Women of India shows that the annual number helped by the society has risen to 12,500 in-patients and 600,000 out-patients. Through the aid of local committees, medical treatment is now extended to women whose caste prohibits them from coming to the hospital, and who are too poor to pay fees, Lady Dufferin's aim was to restore health to thousands of Indian women and children who needlessly suffered and died from ignorance of sanitary principles, and whose caste, customs and prejudices cut them off from the services of male physicians. The scheme has not only saved much suffering, but has been the source of a liberal education to the native communities in which women physicians have done their work. Many natives have contributed to the fund, and a number of Indian and Eurasian women have been induced to study medicine. Funds are being raised in England to increase the number of scholarships for native

INCREASE OF LUNACY IN GREAT BRITIAN. — The forty-eighth report of the British Commissioners in Lunacy, states that there were in that country on Jan-

uary 1st, 92,067 lunatics, idiots, and persons of unsound mind, according to the various returns. This number is 2,245 in excess of the corresponding returns from the previous year, and shows the largest increase in the number of lunatics yet recorded. The report says: "This large increase calls the more for some special consideration, because it follows an increase of 1,974 in the preceding year, that being far above the average for the ten years 1882 to 1892, which was only 1,300. The increase seems to have been fairly general throughout England and Wales, but the predominant feature of the figures is the great increase shown in the county of London, its pauper lunatics numbering on January 1st, 800 more than they did a year previously. It is perhaps right in this connection to point out that from the administrative county of Middlesex, which is fast becoming metropolitan, there is shown from last year an excessive increase of 103, against an average for the previous ten years of 42. From one of the tables attached to the report it appears this state of affairs, though alarming, is not quite so serious when considered in conjunction with the increase of population, the ratio being one insane person in 326, as against one in 331 for the previous year."

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the week ending at noon, September 12, 1894, there were reported to the Board of Health of Boston, the following numbers of cases of acute infectious disease: diphtheria 30, scarlet fever 32, measles 2, typhoid fever 40.

BEQUEST TO NEWTON HOSPITAL. — The will of the late Nathan P. Coburn, of Newton, gives \$15,000 to the Newton Cottage Hospital.

PROFESSOR RICHARDS OF YALE ON FOOTBALL. — Prof. E. L. Richards, of Yale, will have a timely article on "The Football Situation," in the *Popular Science Monthly* for October. He is an intelligent sympathizer with the game and will set forth its many advantages, maintaining that the evils ascribed to it are unreal or can be removed by changes now contemplated.

A NEW LAUNDRY FOR THE MCLEAN INSANE ASYLUM AT WAVERLEY.—It has recently been decided by the trustees of the Massachusetts General Hospital to build a steam laundry at a cost of \$10,000 on their grounds at Waverley. This laundry will have all the latest improvements, much in advance of any in this section. It will be of brick, fifty by eighty feet in size, and two stories high. It will have a sterilizing room, where all the germs from the insane patients' clothing will be scalded by steam under great pressure. Another room will be devoted to the making of the soft laundry soap, which is to be manufactured entirely from the kitchen grease, of which there is a great quantity. The laundry and service-room will be connected by a covered runway, built partly above, and partly below ground so that the grease can be easily wheeled directly from the kitchen to the laundry.

There will be one room for receiving the clothes, and another for distributing them, and a steam drying-room, as well as a large ironing-room on the first floor.

AN OFTICAL LIBRARY. — The New England Association of Opticians, recently chartered, is to establish a library covering optical science more thoroughly than is now possible in any general library in this country. The members are to contribute individually, and, as the society is distributed through six States, an exceedingly valuable reference collection is already assured. During the coming winter the association will secure rooms in some centrally-located business block in Boston and open a reading-room in connection with the library.

Miscellaup.

INCREASED CLINICAL FACILITIES OF THE UNIVERSITY OF PENNSYLVANIA MEDICAL SCHOOL.

During the coming year the clinical facilities at the University of Pennsylvania will be largely increased by the addition of three valuable buildings to the already extensive equipment of the institution. The new buildings are the Agnew Memorial Wing to the University Hospital, the William Pepper Clinical Laboratory, and the main ward connecting the two smaller wings of the Maternity Hospital already constructed. Ground for all three structures has been broken, and the foundation walls are well under way.

The purposes of the William Pepper Clinical Laboratory are in the same general lines as those of the Wistar Institute of Anatomy, recently dedicated; both are intended for advanced study. The new laboratory is designed for post-graduate work, and will possess especial facilities for microscopic and chemical investigations in pathology and bacteriology. It is being built and richly endowed by Dr. Pepper as a memorial to his father. The building is to be simple but massive. A corridor will connect the laboratory with the Gibson wing of the main hospital. The building will be four stories high, with a basement for heating and ventilating purposes. The first, second and third floors will be devoted entirely to laboratories, and the fourth will contain quarters for the curator and janitor. Especial care has been taken to secure light, particularly from the north and west.

The new hospital wing, a memorial to Dr. Agnew, is intended to accommodate very nearly all of the surgical departments now belonging to the general hospital. It adjoins the main hospital on its eastern end. In shape, the new portion is very irregular and consists of a central pavilion, flanked by wings set farther back from the street, long wards extending from each wing towards the rear of the grounds. Between these long wards there is a court sixty feet wide. The wing has three floors, with a basement standing clear of the ground. The servants will be quartered in rooms under the wards, while the basement of the central body of the building will contain the waiting-rooms and dispensaries for the orthopedic department and a gymnasium. The first floor will be given up to the orthopedic wards, the surgical and gynecological dispensaries and the ophthalmic wards and rooms; it will

also have a small clinical theatre seating about 130. On the second floor the surgical and gynecological departments will each have a ward, but this floor will be mainly given up to a large clinical theatre seating 400 students, fitted with private operating and etherizing rooms and a laboratory. A smaller clinical theatre will be in the rear of this. Thus there will be three theatres in this building. The third floor will have the nurses' dormitories and private rooms for patients. Each department is to have its own dispensary, private operating rooms, a main ward with 26 beds, diet kitchen, etc.

The third building under construction connects with the wards of the present Maternity Hospital and when completed will make this one of the best appointed obstetric hospitals in this country.

THE "SLEEPING SICKNESS OF WEST AFRICA."

This curious disease occurs oftener in males between twelve and twenty years of age, although all ages and both sexes may be affected with it. Enlargement of the cervical glands is seen at the onset; drowsiness and actual sleep at unusual hours are followed by profound and lethargic slumber lasting weeks or months. At first, active purgation arouses the patient, but later he succumbs to the lethal slumber and refuses all food; emaciation with increasing atrophy, exhaustion, and starvation causes death at the end of from three to twelve months. When moribund, the coma ceases for a short time and the mental faculties are clear immediately before death. The most frequent and virulent cases occur in the valley of the Congo; others from the Congo to Senegal, in the Sierra Leone district, and in the Hinterland. Slaves taken from the Congo or Sierra Leone districts suffer from the disease when in the West Indies, etc. The prognosis is bad. Guèrin reports 148 cases, all fatal. Gore says 80 per cent. are fatal. Forbes 1 reports eleven fatal cases, also two which passed out of observation. At autopsy hyperemia of the arachnoid and slight chronic pachy, and lepto-meningitis are found; the cerebral substance is pale, indicating anemia of cortical centres. In one case splenic enlargement occurred, in two cases filaria sanguinis hominis were found, probably coincidences. The cause is unknown.

Theories are: (1) septic condition of the blood, as suggested by the arrest of development of active glandular elements; (2) presence of filaria, as advocated by Manson; (3) a neurosis affecting the neurotrophic system, Forbes's suggestion. Treatment has proved useless.

DANGERS OF THE LONG RECTAL TUBE.

It has long been a disputed question as to whether the long rectal tube can safely be passed into the sigmoid flexure. In this connection the opinion of Mr. Harrison Cripps in a recent number of the British Medical Journal is of interest.

In spite of the condemnation of the long rectal tube by Brodie, Treves, and many other eminent authorities, he still finds that in most cases of obstruction or supposed obstruction the tube has been introduced. Fortunately these tubes are fairly soft, so that in a capa-

¹ Lancet, 1894, p. 815.

cious rectum, when they impinge and are arrested about opposite the promontory of the sacrum, they simply coil up and do no harm. If stiffer ones are used the patient's life is placed in imminent risk. patient at St. Bartholomew's Hospital was to be operated on for ruptured perineum. In order to increase the supposed efficacy of the injection, a quart of soap and water, with some ounces of oil, were injected by means of a long tube. The injection never returned. A few hours afterward, owing to the acute symptoms of the patient, Mr. Cripps assisted one of his colleagues in opening the abdomen. The soap and water and oil were found in the abdominal cavity, and a hole below a reduplicated fold in the upper part of the rectum. The patient died. He says that the idea that these tubes can be generally passed into and beyond the sigmoid flexure is a pure delusion, save in the rarest circumstances. As a means of diagnosis, or of treating strictare beyond the reach of the finger, tubes of any kind are absolutely useless. If a stricture is actually present it would be one-hundred to one against the long tabe or bougie entering it, for it would almost certainly catch in the cul-de-sac generally caused by the invagi-nation of the stricture. If a stricture is not present, the arrest of the bougie by the sacral promontory leads to delusive diagnosis. Brodie, in his lecture, alludes to a case in which a worthy practitioner had spent over one hundred and fifty hours in dilating a supposed stricture situated high up. The treatment had extended over a period of a year. Brodie, who was present at the post-mortem examination, found there was no sign of a stricture, the bougie becoming arrested by a curve of the sacrum.

Correspondence.

DEATH OF PROFESSOR BARON HEINRICH VON HELMHOLTZ.

Boston, September 10, 1894.

MR. EDITOR: - The announcement in the last number of the JOURNAL of the grave illness of this pre-eminent man foreshadowed - alas! too certainly - what we must regard as the greatest loss which the scientific world, the medical profession, and all who hail with pleasure discoveries which are to be an inestimable blessing to the human race, have suffered within our generation.

Previous to Helmholtz's careful and intelligent investigations which led to his invention of the ophthalmoscope, no adequate means existed for the exploration of the delicate and complicated structures of the deeper-seated and most important structures of the interior of the eyeball which

are essential to its visual function.

We could watch the course of diseases of the cornea and the iris, and observe the loss of transparency of the crystalline lens, constituting cataract; but were wholly at fault as regarded morbid changes in the retina, the seat of visual perception. In the vast majority of cases of this class, no explorations, by the means then in use, revealed the causes of the lessened vision, and the term amanrosis was used to designate an unknown cause and degree of enfeebled sight - this vague term being substituted, in the lack of positive diagnosis, in cases where, as Walther wittily expressed it, "the patient sees nothing; and the doctor also - nothing."

This opprobrium of ophthalmic medicine continued until 1851, when — thanks to Helmholtz — out of the darkness came indeed a great light. In all this century there has been no revelation of more importance for science and for

humanity.

Apart from the optical scientific value of the ophthalmoscope in aiding in the determination of questions relating to the refraction and accommodation in the eye, and the conditions which may disturb these optical functions, this simple and inestimable ophthalmoscope has a supreme importance in offering to us a clear revelation of the normal appearance of the deeper interior structures of the eyeball; of their actual adaptability for these essential purposes; and, moreover, in affording accurate revelations of the infinitely varied morbid conditions, often previously un-suspected or unexplained, which it renders discoverable.

To cite a single instance of its important revelations: it had not seemed an imaginable condition that highly nearsighted eyes - which seemed, when assisted by suitable glasses, to possess even higher visual capacities than eyes of normal formation — were, in reality, but treacherous friends, liable to great and progressive changes of structure, which gradually, or perhaps suddenly, resulted in great impairment or even complete loss of vision. Happily, knowing as we now do, this liability to progressive changes in near-sighted eyes, and being able to detect these at an early stage by means of the ophthalmoscope, we can, cautioning myopic young people against excessive continuous use of their eyes upon near objects, or in insufficient light, avert mischief which cannot be repaired if our admonitions are unheeded. Unfortunately, young people, especially girls, are extremely unwilling to forego the literary work in which they have become interested, especially the study of languages requiring lexicon work, which is, more than almost anything else, fatiguing to the eyes; or they continue some minute occupation which too often results in blindness of greater or less degree, from sudden increase of the pathological alterations in the retina, and which easily becomes irreparable.

The revelations of the ophthalmoscope have also bestowed great benefits in increasing our knowledge of various affections of the general system. By its means we discover, in the eye, the presence of Bright's disease, of cerebral tumor or congestion, of diabetes, months, and even in some instances years, before a sudden invasion of severer symptoms

becomes the forerunner of speedy death.

I speak enthusiastically of the many forms in which the ophthalmoscope has added to the knowledge and the usefulness of the general practitioner as well as the specialist, because during my first visit of nearly three years in Europe, I had enjoyed the opportunity of studying ophthalmology, as it was, with nearly all the most celebrated teachers in various countries, returning home but a short time before Helmholtz had made his splendid endowment to ophthalmology and to science. When the announcement was made of Helmholtz's invention, I took an early opportunity of making another visit abroad, to observe its application, finding everywhere enthusiasm over the advance, which was no less than a re-creation of ophthalmology, and was, moreover, an immense addition to our knowledge of general diseases of the human system, through this new interpreter of numerous pathological and physiological conditions.

The recent session of the Pan-American Medical Congress, at Washington, was honored by the presence of the Baron Professor von Helmholtz, who afterward, with other delegates, and accompanied by the Baroness, visited the Chicago Exposition, and came thence to Boston on his homeward journey. Here he highly enjoyed his copportunity of seeing the facilities for scientific study afforded at Harvard University and the Institute of Technology.

When paying my respects to him, I said, "Professor, we know a hundred times as much in ophthalmology as we did before you gave us the ophthalmoscope." The charming modesty of his reply was never excelled. With his slight German accent, he said, almost deprecatingly: "I was not even a Doctor of Medicine — I was only Professor of Physics in the University; but I set myself this problem, to illuminate, if I could, the interior of the eye. succeeded."

HENRY WILLARD WILLIAMS, A.M., M.D., Late Professor of Ophthalmology in Harvard University.

METEOROLOGICAL RECORD.

For the week ending September 1st, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:-

Date.		Baro- meter	Thermon- eter.			Relative humidity.			Direction of wind.		Velocity of wind.				in inches.	
M. 27 30.13 58 63 53 70 84 77 N. E. 7 6 C. C. T. 28 30.02 63 73 53 94 75 84 W. S.W. 2 10 G. O. W. 29 30.06 60 64 57 68 79 74 N.E. S.E. 10 8 O. C. T. 30 29.93 60 65 66 93 91 92 S.E. E. 7 4 O. O. F31 29.94 68 77 59 85 57 71 W. W. 8 8 O. C.	Date.	Daily mean.		Maximum.	Minimum.		ď.	aily	8.00 A. M.	8.00 P. M.	8.00 ▲. Ж.		R.00 A. M.	8.00 P. M.	Rainfall in in	
	M27 T28 W29 T30 F31	30.18 30.02 30.06 29.93 29.94	58 63 60 60 68	63 73 64 65 77	53 53 57 56 59	70 94 68 93 85	84 75 79 91 57	77 84 74 92 71	N. W. N.E. S E. W.	S.W. S.E. E. W.	7 2 10 7	6 10 8 4 8	C. G. O.	C. O. C. O.		

*O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., amoky; R., rain; T., threat ening; N., snow. † Indicates trace of rainfall. ** Mean for week.

RECORD OF MORTALITY FOR THE WEEK ENDING SATURDAY, SEPTEMBER 1, 1894.

	ndo	ţ.	, E	Percentage of deaths from							
Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Infectious diseases.	Consump- tion.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and oroup.			
New York	1,956,000	726	321	24.64	12.60	14.70	1.96	5.60			
Chicago	1,438,000	-	- 1		_						
Philadelphia .	1,139,457	363	161	18.20	9.24	9.32	2.34	5.20			
Brooklyn	1,043,000	424	201	24.48	11.28	14.16	.72	7.92			
St. Louis	540,800		-		=		~ =				
Boston	501,107		99	33.84	12.22	15.98	2.35	11.28			
Baltimore	500,000	_	-				6.30	6.30			
Washington .	285,000	95	47	31.50	16.50	11.55					
Cincinnati	325,000	113	41	21.36	12.46	14.24	.89	4.45			
Cleveland	325,000	117	6 8	31.45	9.35	15.30	2.55	6.80			
Pittsburg	272,000	_	_		_		_	_			
Milwaukee	265,000	27	10	_	_	. –		_			
Nashville	87,754	28	9	3.57	17.85	=	3.57	_			
Charleston	65,165		•	9.01	11.80	_	3.01				
Portland	40,000		_	_	_	_	_	_			
Worcester	100,410	23	10	43.50	4.85	30.45	_	8.70			
Fall River	92,233	34	la	32.34	11.76	26.46	2.94	0.10			
Lowell	90,613 79,607	33	14	22.88	14.30	14.30	2.02	5.72			
Cambridge	65,123	31	12	35.53		22.61	8.23	6.46			
Lynn	50,284	16	7	37.50	6.25	25.00	0.20	0.20			
Springfield	49,900	1 -	i -	000	0.20	20.00	_				
Lawrence New Bedford .	47,741	19	12	31.56	5,26	31.56	_	_			
	43,348			-	0.20	-	_	_			
Holyoke Brockton	33,939		3	37.50	12.50	25.00	. –	_			
0-1	33,155	16	10	25.00		6.25	6.25	6.23			
**	32,925		_		-			·			
36-14	30,209	4	1	25.00	25.00	25.00	I —	_			
Chelsea	29,806	14	7	14.28		14.28	l –	_			
MA-Lham	29,313	8	4	60.00	_	25.00	_	_			
Newton	28,837	15	8	26.66	_	13.33	6.66	_			
Gloucester	27,293	_	l —	_	_	_		_			
Taunton	26,955	_	-	_	_	_	L -	_			
Waltham	22,058	8	1	_	12.50	_	~ —	-			
Quincy	19,642	-	l —	_	_	_	_	_			
Pittsfield	18,802	3	3	33.33	_	33.33	• -	111111111111			
Everett	16,585	3	3	66.66	_	83.33	_	_			
Northampton .	16,331	8	2	37.50	12.50	37.50	_	_			
Newburyport .	14,073		1	_	_	. –	-	_			

Deaths reported 2,375: under five years of age 1,078; principal infectious diseases (small-pox, measles, diphtheria and croup,

infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 595, consumption 278, acute lung diseases 160, diarrheal diseases 334, diphtheria and croup 144, typhoid fever 47, whooping-cough 28, scarlet fever 19, cerebro-spinal meningitis 11, malarial fever 4, measles and puerperal fever 3 each, small-pox 2, erysipelas 1. From whooping-cough New York 5, Philadelphia, Brooklyn, Boston and Washington 4 each, Cincinnati, Cleveland, Springfield, Brockton, Salem, Fitchburg and Newton 1 each. From scarlet fever Cleveland 6, Boston 4, New York and Philadelphia 3 each, Cincinnati, Lowell and Cambridge 1 each. From cerebro-spinal meningitis New York 4, Washington 3, Philadelphia, Boston, Cleveland and Worcester 1 each. From malarial fever Brooklyn 2, New York and Philadelphia 1 each. From measles New York 2, Brooklyn 1. From small-pox New York 2.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending August 25th, the death-rate was 16.8. Deaths reported 3,309: acute diseases of the respiratory organs (London) 148, diarrheal diseases 395, measles 63, whooping-cough 59, diphtheria 58, scarlet fever 40, fever 31, small-pox (London 2, Plymouth and Birmingham 1 each) 4.

The death-rate ranged from 10.7 in Plymouth to 27.6 in Preston; Birmingham 15.9, Blackburn 16.2, Bradford 16.1, Cardiff 12.3, Gateshead 19.0, Hull 13.2. Leeds 20.1, Leicester 13.5, Liverpool 27.2, London 15.4, Manchester 17.4, Nottingham 16.3, Portsmouth 18.3, Sheffield 17.3, Sunderland 26.1.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 1, 1894, TO SEPTEMBER 7, 1894.

Leave of absence for twenty days, to take effect October 10, 1894, is hereby granted Captain Jefferson R. Kean, assistant aurgeon.

Leave of absence for one month, to take effect on being re-lieved from duty at Washington Barracks, D. C., with permis-sion to apply for an extension of fifteen days, is granted Major JOSEPH K. CORSON, Surgeon.

Leave of absence for four months on surgeon's certificate of disability, is granted Major Washington Matthews, sur-

Leave of absence for one month and fifteen days, to take effect on or about September 10, 1894, is granted CAPTAIN CHARLES B. EWING, assistant surgeon.

FIRST LIEUTENANT JAMES M. KENNEDY, assistant surgeon, will be relieved from duty at Fort Custer, Montana, and will report in person for duty at Camp Merritt, Montana.

By direction of the Secretary of War, the following changes in the stations and duties of officers of the Medical Department

MAJOR W. H. GARDNER, surgeon, relieved from duty at St. Paul, Minn., and ordered to Fort Custer, Mont., for duty.

MAJOB HENRY McELDERRY, surgeon, relieved from duty at Omaha, Neb., and ordered to Fort Robinson, Neb., for duty.

MAJOR GEORGE W. ADAIR, surgeon, relieved from duty at Fort Robinson, Neb., and ordered to Washington Barracks, D. C., for duty.

MAJOR JOSEPH H. CORSON, surgeon, relieved from duty at Washington Barracks, D. C., and ordered to Fort S. A. Russell, Wyo., for duty.

August 20, 1894. S. O. 204, A. G. O.

RECENT DEATHS.

PROFESSOE HEEMAN LOUIS FERDINAND HELMHOLTZ, the celebrated physiologist and physician, died September 8th at Berlin, from the effects of a stroke of paralysis. He was born in Potsdam, August 31, 1821. After studying medicine in the Military Institute at Berlin and being attached for a time to the staff of one of the hospitals there, he returned to his native town as an army surgeon. In 1848 he was appointed professor of anatomy in the Academy of Fine Arts at Berlin; in 1855, professor of physiology at Konigsberg, whence he removed in 1858, to Heidelberg, where he also filled the chair of physiology. He was afterward appointed professor of physiology at Berlin. The works of Helmholtz, which are well known throughout Europe, have reference principally to physiological conditions of the impressions on the senses. On December 1, 1873, the Copley Medal of the Royal Society of London, was awarded to him in recognition of his eminent services to science. him in recognition of his eminent services to science.

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the South Carolina Medical Association, 1894. Transactions of the Obstetrical Society of London, Part II,

Aseptic Surgical Technique. By Hunter Robb., M.D., Balti-

Transactions of the Medical and Chirurgical Faculty of the State of Maryland. Baltimore. 1894.

Inebriety as a Disease, Analytically Studied. Phelps, M.D., of Rochester, Minn. Reprint. 1894.

Pharmacoposia of the Hospital for the Diseases of the Throat. Fifth edition. Edited by F. G. Harvey, F.R.C.S., E.D. 1894.

An Operating Table. Asepsis in Minor Procedures. Notes on Gynecological Technique. By Hunter Robb, M.D., of Baltimore. Reprints. 1894.

Massage Methods for the Relief of Tinnitus and the Improve-ment of Hearing. By Louis J. Lautenbach, M.D., Ph.D., of Philadelphia. Reprint.

Original Articles.

SOME MENTAL DISORDERS OF CHILDHOOD AND YOUTH.³

BY HENRY M. HURD, M.D., Superintendent of the Johns Hopkins Hospital, Baltimore.

It is daily more evident that the domain of neurology is widening and comprehends both morbid psychology and morbid neurology, and that neurologists and alienists are co-laborers in co-ordinate departments of a growing science. Permit one whose work has been in clinical psychology to express the conviction that in the future the problems of psychology must be approached more and more from the side of scientific neurology. The need of a definite study of mental phenomena through the methods of scientific precision adopted by the neurologist is apparent to all who seek to advance psychology. Every alienist ought to be a trained neurologist and every neurologist ought to study morbid mental phenomena as carefully and precisely as he studies nervous diseases. Although neither born nor educated in New England, I have always felt a peculiar interest in the work of her sons in these broad fields of knowledge. The list of names of those who have attained eminence in such studies is a long one; and I can only mention a few like Luther Bell, Edward Jarvis, the elder Stedman, Howe, Brigham, Bancroft, Earle, Butler, Ray, Draper and Goldsmith in my especial line of work — all of whom have passed from earthly work. Most of them died full of years and of honor after laborious and useful lives devoted to science and philanthropic efforts; but some like Bell, Draper and Goldsmith, were cut off in the maturity of their powers with long years of increasing professional activity before them. Bell's essay "On a form of disease resembling some advanced stages of mania and fever, but so contra-distinguished from any ordinarily observed or described combination of symptoms as to render it probable that it may have been an overlooked and hitherto unrecorded malady," has the honor of being the first clear, accurate and discriminating description of the fatal disease now known as delirium grave or Bell's disease. Jarvis's paper on the "Influence of distance from and nearness to an insane hospital, on its use by the people," had probably more influence upon legislation looking to provi-sion for the dependent insane in the United States than any other paper of similar length ever published. It gave a death-blow to the theory that one hospital for the insane could be useful to a large State. In all the range of painstaking investigation, I know nothing to compare with the thoroughness and masterly character of the statistical work contained in this in-Howe's various reports to the Legislature of Massachusetts on Idiocy, Deaf-Mutism and Blindness inaugurated a philanthropic movement for the education, training and development of these defective classes which has spread over the whole United States. These and similar papers prepared by their authors in the line of chosen professional study are passing examples of the work which has done so much honor to Boston and New England medical and psychological thought in the past. It is most gratifying to be able to congratulate you upon the higher character of the work done here to-day by Putnam, Edes, Folsom, Knapp,

¹ Read before the Boston Medico-Psychological Society, April 19, 1894.

Cowles, Channing, Stedman, Walton, Fisher, Webber, Prince and others. The era of pioneer work in nervous diseases and in behalf of the defective and insane is now happily over. It is no longer necessary to urge the erection of buildings for the accommodation of the latter upon an unwilling or indifferent public. Special institutions exist for the proper treatment of all classes of the insane and of many forms of nervous disease; neurology and psychology are now on a higher plane. The neurologist of to-day is free to occupy his thoughts and employ his energies in the study and treatment of disease. The contributions to medical literature now made by the specialists of Boston testify convincingly to their appreciation of the opportunity which has come to them through the selfsacrificing labors of earlier men.

It is my design to present to you briefly, to-night, "Some Mental Disorders of Childhood and Youth."

The problems of mental disease or of morbid mental phenomena in childhood are complicated by a variety of causes incident to age, hereditary tendencies to disease, immaturity and physiological development - each bringing new factors into the mental life of the child and adding fresh causes of disturbance or disease. Goubert, who has recently studied the morbidity of childhood in Paris, in the light of mortuary statistics, has deduced the interesting result that each stage of childhood possesses peculiar tendencies to disease and For example, up to the sixth month the infant is liable to the diseases which follow mal-nutrition; from the sixth to the thirtieth month, to diseases due to inherited tendencies of whatever character they may happen to be; from the third until the seventh year, to epidemic diseases; from the seventh until the tenth year, there seems to be a period of normal vitality and a comparative immunity from epidemic diseases; and from the tenth until the fifteenth year, to cardiac, rheumatic and nervous affections. A similar study of the liability of childhood to nervous disorders reveals the facts that before the sixth month we have congenital epilepsy or idiocy; from the sixth month until the seventh year, convulsive affections, night-terrors, delirium, transitory manial and acute maniacal attacks; from seven to ten years comparative immunity from disease with the exception of chorea; and from ten to fifteen years, melancholia, imperative conceptions, convulsive tic, hysterical affectious, paranoia and the like.

Hereditary tendencies to mental and nervous diseases also complicate the relations of the child to good health. Inherited defects of nerve or brain tissue, as has been pointed out by Clouston, are more apt to develop during the period of the rapid growth of the brain when muscular co ordination and speech are developed, and when the first strain is put upon the growing brain by educational requirements. The brain and nervous system are developing new functions; and if the inherited quality of the brain cells is unstable or the character of the tissue does not fit it to assume an independent originative life, weaknesses are developed and defects become apparent. Such inherited defects appear in early childhood in the form of squint, stammering, inability to learn, night-terrors, transitory delirium during febrile attacks, infantile paralyses, etc.; and later in the form of chorea, epilepsy, asthma and ocular defects; and finally, at puberty, as hypochondriasis, hysteria, emotional instability, moral perversions, imperative conceptions and insanity.

Brain immaturity, in connection with faulty ed-

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tional methods, also adds another disease-producing factor. Protoplasmic energy required for the growth and development of brain tissue cannot be expended in molecular activity without dangerous drafts upon the future stability and permanent dynamic activity of that organ. According to Boyd, quoted by Clouston, the brain acquires 90 per cent. of its growth by the seventh year, and its full growth between fourteen and seventeen years of age; but many years must elapse thereafter before it reaches its full maturity and perfection. If in the process of education, energy designed to further its growth is dissipated in functional activity, hereditary tendencies to disease become thereby developed, or the development of the brain is limited and defects become evident which under more of mania or melancholia occurring in those suffering favorable circumstances would not have existed.

A fourth most important factor is introduced by the changes which accompany the development of puberty in both sexes, marking the period when nature is beginning to develop the reproductive function. Prior to this time her effort has been to promote the growth of the individual; now she initiates a bodily and mental activity which looks to the perpetuation of the race. The pubescent change is coincident with growth of body; but it introduces new functions, fresh causes of derangement, and taxes the physical and nervous energies to satisfy the desires, longings and aspirations which are the legitimate result of the development of the second stage of life. Nature prepares the way for the function of reproduction long before the system is mature enough to exercise it. In other words, after puberty is established, in both sexes, years are required before the system is mature and perfect enough to permit the subsequent perpetuation of the species. During this long period the influence of the maturing function is felt upon the whole mental life of the individual. Before puberty, mental disorders are simple, and mental phenomena are largely automatic and easily understood. After puberty, new powers of mind are developed, and greater complexity is introduced into mental phenomena.

An interesting analogy exists between the mental states of childhood and those of primitive people. The primitive man is imaginative, unreasoning, full of superstition, credulous, and the creature of desire and of impulse. His intellectual processes are automatic, spontaneous, instinctive, and his conclusions are not elaborated by thought or by painstaking inquiry. The same peculiarities characterize his mental derangements. He is the victim of mania or dementia — more rarely of melancholia. He has few systematized delusions, and his mental symptoms lack complexity or coherence. yond hallucinations of hearing or of sight, which are to be traced directly to his imaginative temperament and his early training, his insanity presents little of interest. In childhood, up to the age of puberty, a similar simplicity of mental phenomena exists. Light is also thrown upon the hallucinations and morbid mental states of children by the religious ordeals of savage life. The savage who is to undergo the religious initiation prior to becoming a warrior lives in solitude, abstains from food, and is deprived of sleep; his imagination is excited by tales and traditions, and his expectation is strained to receive the inward vision or to hear the voice which shall proclaim him acceptable to hear the voice which shall proclaim him acceptable to the deity. Solitude, starvation, lack of sleep, highwronght enthusiasm and expectant attention all contribute to produce the longed-for hallucination. In

the morbid mental states of children in a similar manner, malnutrition, poor sleep, an overexcited nervous system, improper educational pressure and undue stimulation of the imagination produce analogous results. Children have hallucinations of sight and hearing, but rarely fixed delusions except in reference to bodily conditions. They are impulsive and lack selfcontrol; they may have imperative conceptions and fixed or insistent ideas after puberty, but no elaborations of thought and no systematized delusions.

In the present paper I shall not consider idiocy, imbecility or cretinism, moral imbecility or epileptic degeneration, which are not forms of insanity so much as symptoms of mental degeneracy; nor shall I speak from congenital mental defects. I desire, therefore, to limit my paper to the consideration of imperative conceptions, mania (confusional insanity), melancholia, convulsive tic and pubescent insanity. In what classes of children do these disorders develop?

(1) In neurotic children with unsymmetrical heads, with brains of feeble resistance to disturbing influences, and nervous organizations quickly responsive to bodily disorders however slight. They suffer from night terrors and show delirium after slight febrile attacks.

(2) In children who have a hereditary tendency to mental disease. In many of these an apparent symmetry of head and a well-developed body exist, but the quality of the brain seems at fault. It is lacking in the ability to will efficiently, to inhibit morbid impulses or to resist imperative conceptions.

(3) In children with a feeble physique who are unable to join in the out-door sports of others, and who thus become overstimulated by reading or have an overdevelopment of their imaginative powers.

(4) In backward children who develop slowly. The backward child is not necessarily a defective child, any more than the child who gets his bodily growth slowly is defective. Slowness of development in body and brain have sometimes been associated finally with peculiar powers. This, however, is generally more true after puberty than before. Slowness of bodily growth commonly implies nutritive debility; and backwardness of mind an allied defect in the metabolism of the brain cell. A wise educational method would conserve this energy until nature is ready to use Too often, however, it is recklessly exhausted by high-pressure educational efforts, and disease results.

Simple Psychoses. — Simple psychoses in childhood are not uncommon. They often develop in strict conformity to the classic physiological axiom of Cullen, who said a century ago, that " certain impressions and certain states of the body, like to those which produce the sensation of consciousness, may both of them act upon the nervous system without producing any sensation" (of consciousness). These impressions and states of the body would have little weight in the adult, but are effective in children because of the nervous instability of childhood. The delirium of children - nightterrors so-called — is a familiar example of this. sleep of the child is broken by digestive derangements, and the child suddenly awakening cries out and has active hallucinations of hearing and of vision which may last several hours.2 A better example, however,

may be found in the mild melancholia which often develops in nervous, delicate children with feeble vitality, impaired nutrition and overactive brains. In her autobiography, Harriet Martineau gives from personal recollection an account of the morbid character of her own mental processes when but seven years of age. She says: "I must have been a remarkably religious child, for the only support and pleasure I remember having from a very early age was from that source. While I was afraid of everybody I saw, I was not in the least afraid of God. Being usually very unhappy, I was constantly longing for heaven, and seriously and very frequently planning suicide in order to get there. I was sure that suicide would not stand in the way of my getting there. I knew it was considered a crime, but I did not feel it so. I had a devouring passion for justice; justice, first to my own precious self and then to other oppressed people. Justice was precisely what was least understood in our house in regard to servants and children. Now and then I desperately poured out my complaints, but in general I brooded over my injuries and those of others who dared not speak; and then the temptation to suicide was very strong. No doubt there was much vindictiveness in it. I gloated over the thought that I would make somebody care about me in some sort of a way at last; as to my reception in the other world, I felt sure God could not be angry with me for making haste to Him when nobody else cared for me and so many people plagued me. One day I went to the kitchen to get the great carving-knife to cut my throat; but the servants were at dinner, and this was put off for that time. By degrees the design dwindled down into running away. I used to lean out of the window and look up and down the street and wonder how far I could go without being caught. I had no doubt at all that if I once got into a farm-house and wore a woollen petticoat and milked the cows, I should be safe and that nobody would inquire about me any more." When older she suffered acutely from ill-defined terrors, or even harmless noises "like the beating of feather-beds on Castle Hill at Norwich"; and her whole life was made unhappy by horrible dreams which left persistent impressions upon her mind. These mental states were directly traceable to a state of innutrition. She had diarrhea, and little ability to assimilate food. In some of these overwrought and underfed children we have a development of distrust and morbid fear. In a little fellow of nine years of age who had been improperly urged in school, a morbid conscientiousness developed and an anxiety to do what he conceived to be right. He was fearful that he might not say his prayers cor-

He was fearful that he might not say his prayers coror words intelligible with difficulty. Many tremble in all their limbs, throw themselves terrified into the arms of the frightened mother or nurse, without clearly recognizing them, and it becomes difficult to soothe them. After a short interval the scene is repeated, not infrequently several times in succession, so that half an hour or more may elapse before complete quiet ensues and the exhausted child again falls soundly saleep. As a rule, the remaining part of the night is passed in quiet repose; and on awaking the child knows nothing of the events of the night, and does not even remember the physician who was seated before the bed during the attack. Attacks of this kind are repeated at irregular intervals, sometimes every night, sometimes a few times a week or even more infrequently. Two attacks rarely occur in one night. The children present no symptoms during the day which can be brought into any relationship with the necturnal paroxysms. . . . That dream visions and hallucinations play a part in the process, is evident from the fact that they are often distinctly mentioned by the children. I have heard them beg that the chains be taken away, that the animals be driven away, etc. It also happens that they want to jump out of bed in order to escape their fears. A boy, aged four years, who had been very much frightened by a bee, had an attack of pavor nocturans during the following night, in which he was constantly talking of a fish which was threatening him. This was repeated for a few nights until the child was afraid to enter his bedroom, and always wanted to be in the open air."

rectly, and often passed balf the night upon his knees repeating his petitions over and over until he thought them to be "perfect."

Imperative Conceptions. — In this case as in many others, imperative conceptions were observed which impelled him to strange acts, like kissing the ground, putting mud into his mouth, placing his knife and fork in strange positions at the table, throwing his cap without apparent reason into the different corners of the room in turn, etc. These and similar imperative conceptions do not seem so much imperative ideas as imperative motor acts. This is not surprising when we call to mind that the mental concepts of a child, except possibly those which have been especially called into activity by religious training or by nursery tales addressed to the imagination, are of the crudest character and do not possess the dominating force of the imperative conceptions of an adult paranoiac. child may have imperative conceptions about God or in reference to wild animals or hobgoblins as the result of education, it is true, but generally they are developed in connection with isolated motor acts, and do not lead to insistent or fixed ideas. Such imperative conceptions are instinctive in character, and are due to reflex bodily irritations acting upon the brain. Morbid self-distrust is not uncommon among those who have been religiously educated. A little patient under my care became fearful she would not speak the truth if any question were answered by a simple "yes" or "no," and invariably replied, "It may be so," or "It may not be so"; and repeated questioning could elicit no positive affirmation or denial.

Convulsive Tic. - In others, convulsive tic or coprolalia in a disgusting form are present, A conscientious child may be conscious of the infirmity, but is powerless to control the morbid impulse. victim of coprolalia was so much annoyed by her tendency to utter indecent words, she remained constantly with her mouth widely opened and when the impulse to speak could no longer be resisted, attempted to substitute a more seemly word, but always without avail. My friend the late Dr. Gundry, in a private letter, related a similar case of coprolalia in a boy, which persisted to manhood. This child had an insane brother, mother and grandmother. He was bright, ambitious and truthful, and was neither profane nor obscene in conversation. Often, however, in company at dinner, when listening intently or when studying his lesson alone absorbed in his task, his throat would give a gulp and some vile word would be belched out, as if unconsciously. Sometimes the word would be plainly uttered, sometimes indistinctly. He never recovered from this peculiarity. Many years afterwards Dr. Gundry met him in a court-room, as a newspaper reporter. Several times during the season of the court he uttered a single profane or obscene word. He was respectable and had a position of responsibility upon a newspaper, but was occasionally troubled with this incontrollable tendency. He was conscious of some absurd thought intruding itself upon his mind, but no idea of speaking until he heard the vile word uttered loudly and explosively. Dana has reported a case of a similar character in a backward boy of twelve years, who prior to a similar speech disturbance had convulsive seizures and afterwards chorea. In this case, however, a congenital mental defect seems to have existed.

Maniacal Attacks. — In my experience maniacal attacks are apt to take the form of confusional insan-

ity. They generally proceed from some bodily disease like chorea, or are due to fright or shock or injury. The attacks of transitory mania which have been described so frequently by French writers are probably due to nocturnal epilepsy. The distinguishing feature of the mania of childhood is the absence of fixed delusions and the presence of great motor activity. The excitement in fact seems more like a very active delirium than an acute mania. This is especially true of choreic mania.

Melancholia. — Actual melancholia does not generally develop much before the onset of puberty, and the delusions which are present are of much the same character as the melancholic delusions of an adult. majority of cases they are of a hypochondriacal nature and relate to bodily conditions. With the religiously educated or overconscientious, they relate to a failure to perform religious duties or to a fear of harm to others from their presence. In two cases under my care there were present delusions of poison, which interfered with the proper taking of food. The most common delusions of these patients, however, are those which relate to bodily conditions. In certain rare cases hallucinations are observed. Among young girls approaching puberty hysterical phenomena are present, and complicate the mental symptoms. Suicidal impulses are not uncommon.

Pubescent Insanity. — The most characteristic form of mental disturbance at puberty is pubescent insanity. As at this period the intellectual side of the individual is not accentuated and the emotional nature is disproportionately developed, the morbid symptoms relate almost wholly to the latter. They are in the domain of the affectious, and lead to perversions of feeling, eccentricities of conduct, and personal acts which are inconsistent with the previous character of the child. Self-control is lessened, natural instincts are perverted and healthy sentiments are lost. Unpleasant and abnormal traits of character become unduly prominent so prominent in fact that many persons, losing sight of the non-development of marked intellectual traits at this time, disregard them altogether, and speak of these cases as cases of moral insanity. If, however, an actual outbreak of insanity can be prevented until puberty becomes fully established, especially in girls, perversions of sentiment disappear, and the "moral insanity" is no longer apparent. If, on the contrary, appropriate treatment is not initiated, intellectual derangements sooner or later appear, and actual insanity with delusions becomes fully established. Heredity plays a most important part in this form of disease. I cannot remember a single patient who did not have a hereditary tendency to insanity. As before remarked, emotional disturbances and moral perversions precede the manifestation of any intellectual disturbance. Evil propensities, wayward conduct, irritability, inattention, impatience of control and general irresponsibility marks the conduct. Such patients frequently possess the precocity which characterizes a nervous temperament. They are stimulated in school by the presence and competition of others, and early become proficient in study; but they are impressible, excitable and ill-balanced. Prior to the development of actual insanity, they display many unnatural characteristics. They are alternately elated and depressed. Their periods of depression are characterized by stupor, listlessness, indifference and lack of the power of appli-

them to do extravagant acts. They are restless, excitable, loquacious, and have wild schemes for business or study, or extravagant views as to the spending of They are uncontrollable at home, and cause money. friends and relatives great sorrow by their waywardness. After being on the border-line of mental disease for months and years, alternately reproached by relatives for stupidity and idleness, or punished for ugliness, insubordination and vicious conduct, their morbid mental condition is finally recognized and they are placed in asylums. In a few instances, habits of selfcontrol and composure are re-established by a long period of treatment, and they return to their friends to live as mental invalids, unable to do anything but routine work and destitute of self-directing power. In the vast majority of cases they develop what is known as periodic or recurrent mania, more commonly known as folie circulaire, and oscillate between depression and elation. Most cases of recurrent, circular or periodic insanity have their origin at puberty, and are due to an original unstable state of the nervous system, as is shown by the mental failure which follows an attempt to take on the second stage of physical and men-tal development. The inherent vice of the constitution is so great, the mental faculties yield to the first strain which is put upon them. The partial recovery which follows is rarely a complete restoration, and a vicious cycle of depression and exaltation, excitement and stupidity is established. Hence pubescent insanity is generally an evidence of a degeneration which is congenital, and from its nature, incurable. Among this class of cases, rapid recoveries and speedy relapses are found to occur. The mind has no tenacity, no fibre, and cannot hold a condition of health or disease long. The apparent health is a sham, and the symptoms of disease are not continuous. The delusions do not become systematized, and the morbid manifestations are those of depression, purposeless excitement or moral perversion.

In the foregoing brief and necessarily incomplete sketch of the common and simpler mental disorders of children, I have omitted any allusion to the startling phenomena of morbid impulsions to crime in childhood. Impulses to kill, to burn, to steal, to commit sexual crimes, it is true, are not uncommon; but as a rule are developed in epileptics and children who suffer from congenital mental defect. They are of interest as illustrative of premature criminality; but they are the results of an originally abnormal personality and throw little light upon the genuine insanities of childhood.

In conclusion, permit me to add the conviction that I shall be remiss in professional duty if I do not urge upon you as medical men to call a halt in the present high-pressure educational methods in vogue in our primary schools. The feeble mental powers of growing children are taxed to the utmost by excessive memorizing of isolated and miscellaneous facts. Nervous and conscientious children are rendered morbid by the exactions of oppressive regulations or a foolish routine, which confuses moral distinctions and gives peace to the untruthful alone. Knowledge is not imparted as a means of strengthening and developing the mind, but for its own sake as useful facts. Little children are subjected to the worry of examinations and to the ruinous competition of marking and of weekly report-cards. Growing children are drilled to carry out elaborate mathematical calculations in haste, and a cation. Their periods of elation, on the other hand, lead | premium is often placed upon rapidity of performance

Too many branches are rather than correctness. taught and too many hours are spent in school. In many schools children of ten years of age are compelled by reason of excessive lessons to spend hours at home which should be devoted to play or to sleep in the preparation of lessons. To regular school duties in many instances, especially with young girls, is added a semi-weekly music lesson which involves several hours a day of close application to routine "practising" at the piano in a constrained position. The exercise is monotonous and wearisome to the last degree to minds and bodies already overtaxed by study and several hours of confinement to the school-room. Recreation even is converted into a fresh tyranny. Almost every girls' school has a well-equipped gymnasium where muscular exercise is made compulsory in movements designed to cultivate the physical system and where all movements must be executed with the preci-While engaged sion and exactness of military drill. in writing this paper I chanced to visit a gymnastic exhibition in a well-appointed school where girls varying from ten to fourteen years of age were taught. Their movements were marvellously precise and correct, and were executed with dash and enthusiasm. was struck, however, with the nervous strain apparent in the countenances of many of these young girls. did not seem play or recreation, but a task to be executed with as much expenditure of nervous and mental energy as any form of study. These are every-day examples of the trend of our present educational methods, and they might be indefinitely multiplied; but I spare you the further details. Is it any wonder, under these circumstances, that the mental disorders of childhood are increasing in frequency? Is it not our duty as medical men to protest against the burdens which are thus unnecessarily placed upon growing and immature brains?

THE DECLINE OF THE PESSARY.1

BY JOHN G. BLAKE, M.D.

THE writer who states that fac-similes of the cylindrical vaginal speculum were found in the ruins of Pompeii and Herculaneum makes no mention of a pessary; and yet when we stop to think that the genius who hit upon the means of exploring the vagina and cervix must soon have been convinced of the necessity for something to maintain a corrected displacement, or straighten a tortuous canal, we are disappointed at his inventive limitations, which exhausted themselves so soon. However, we may feel certain, that when the need became urgent, the man appeared, as in the other When the race needs anything emergencies of life. badly, it usually goes to work and produces it. fortunately the names of both inventors of the original instruments are lost to fame as completely as the builders of the Pyramids, the Cathedral of Cologne, and other world wonders.

Their modern followers have been more successful; and we have Smith, Brown, Jones and Robinson's pessaries without number. In fact, as the "Encyclopedia of Gynæcology" states, there is scarcely a man prominent in this department of disease who has not either invented or improved a speculum or pessary. They seem to have emulated the example of the gentleman who was claimed to be a benefactor of his race, because

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he made two blades of grass grow where but one sprang Dr. Bigelow once remarked in my hearing, when examining and explaining the merits and defects of aural specula to a class of medical students, that one could see almost as well with some of them as without them — which might in another sense be applied to pessaries. However, as their production belonged to a certain stage - long since passed away - in the mechanical development or evolution of knowledge of the treatment of uterine disease, they have deserved well for what they have accomplished. To those of them that are dead and buried, we will remember that "nil nisi bonum mortuis" is a generous and manly motto. No one invents pessaries now. To the practitioners of to-day, the condition of things gynecological existing in our medical community only a generation ago can hardly be realized. A view of the os a few times during my course in the school, through a cylindrical speculum in the hands of Dr. Minot, and the application of argt. nit. (which was the classical treatment for that classical but misnamed disease, ulceration of the womb,) was the extent of instruction. Lectures were delivered by the elder Storer on the diseases of women, mostly on those connected with parturition, and that was all. Indeed, there was a well-marked scepticism in the older medical mind about the existence or necessity for much treatment beyond the use of a ring or some simple form of support; and other treatment was formed on this view. It would be difficult to convince my younger hearers of the extent to which their use was carried. An anecdote will best illustrate. A well-known professional brother was called upon by a young lady for advice and treatment. After examination he introduced a pessary. On returning home, and reporting to her mother, the latter visited the doctor and reproached him with considerable warmth for resorting to such The doctor in his blandest tones assured her that there was no impropriety whatever, and then began to talk of her own condition. Before she left the office, she, too, wore a pessary.

This is among the humorous features; but there is another and graver side, in the evils resulting from Most of us have seen their abuse and non-fitness. more or less severe pelvic inflammations and ulcerations resulting from their use under wrong conditions. This applies to all forms, but perhaps more especially to the varieties of stem pessaries. Many treatises on uterine disease contain plates showing the evil of their use in ill-selected cases and unsuitable conditions, resulting in laceration and deviation of the uterine canal. Skene, in one or two plates, shows it very clearly. Indeed, these evils had reached such a height, that for a time it was quite the correct thing to inveigh against Yet of all the the use of stems under any conditions. forms of mechanical devices available, the stem, under proper restrictions and in appropriate cases, was most capable of good results. It is so now, for certain purposes; although the necessity for its use has diminished with the adoption of other methods of treatment.

This leads me to speak of the conditions which call for such use. As we all know, the vast majority of uterine displacements are of the backward variety—either retroversion or retroflexion, of various degrees, accompanied by more or less hypertrophy of tissue of the fundus and body. In flexions there is atrophy of the muscular fibre at the point of flexion. One would naturally suppose that a knowledge of this fact would be followed by efforts to remove this condition before

attempting to restore and maintain the organ in its normal position. As one writer puts it, you cannot have pathological displacement without inflammation; and without the removal of this condition, no permanent result can attend any plan of treatment. Before recent measures were devised, this was not always easy of accomplishment; a partial removal was not followed by permanently good results with any form of pessary. In the minds of some of the best gynecologists the whole plan (treatment by pessaries) is unsatisfac-Fritsch, a German tory. Here is the view of one. writer, declares that it is easier to perform laparotomy than to apply an accurately fitting pessary. He had spent ten years in learning the treatment by pessaries, and considered it the most difficult in the whole range of gynecology. The same author criticises their use, declaring that the pessary heals palliatively, but injures definitively; for it distends the fornix vagina so enormously, that even after it has been worn for years, a cure is not to be hoped for. On the contrary, retroflexion of the uterus returns after the removal of the pessary. The longer the uterus has been displaced, the longer the time necessary to enable the relaxed ligaments to return to a normal condition; and a few days have been sufficient after its withdrawal, to have the uterus fall back into its old position. Other authors disagree with this view, and claim permanently good results in a large number of their cases. The truth is, that where the circumstances of the patient admits of the necessary rest and time, good results attend their use in The constitutional requirea large number of cases. ments should be always carefully and faithfully at-

Among the means for attaining permanent cures, may be mentioned narrowing the vagina, pregnancy followed by prolonged rest in bed, dilating and curetting, and shortening the round ligaments. The first, as we know, is only called for in complete prolapse, where no instrument, without external support, will keep the uterus within the vagina, but where it can be accomplished by narrowing the canal and outlet. cases are comparatively rare. Pregnancy, followed by long rest in bed, has in my experience perfectly cured many cases of severe long-standing backward displacement. The operation of dilating, curetting and packing is particularly adapted to the cure of anteflexions, and to the removal of enlargements which attend all forms of backward displacement. In the conditions of narrow cervical canal so common in anteflexions, giving rise to painful menstruation and producing sterility, there is no procedure which is followed by happier results than this. In my experience, it has never been necessary to use a stem pessary after its thorough performance. Occasionally a repetition may be called for, The combined dilating, curetting, and Alexander, is to my mind the true solution up to date of the vexed problem of backward displacements.

Ventral fixation, by opening the abdomen, and by various other methods (the vaginal, for instance) of fastening the uterus, has been advocated by many writers; I see no advantage in them over the simple, harmless, and in most cases effective operation in proper cases, of dispensing with pessaries. In my hands, it has certainly yielded satisfactory results, and has been Alexander, and he preferred the latter. wholly free from danger. from that of many. Lawson Tait, for example, speaks in the canal. Had some failures, but thought he was slightingly of it because his two cases did not turn out to blame; they were in early cases.

hundred times, he may change his opinion. The early ovariotomists were not so easily discouraged, and did not condemn the operation because their first trials were not successful. Experentia docet; familiarity with the technique, and a more careful selection of suitable cases, combined with proper preparation by reducing the size of the uterus, may be followed by a more favorable view of its merits. To my mind, neither he nor any one else has yet devised a simpler, less dangerous, or more effective measure for the emancipation of women from the wearing of pessaries, than the two operations of dilating and curetting, and Alexander.

At a recent meeting of the Gynecological Society of New York, the merits and demerits of Alexander's operation were fully discussed. The views of Dr. Edebohls and Dr. Cleveland were so fair, and represented my own judgment so accurately, that I venture to present a condensed report for the benefit of those who may not have seen the original account in the Gynecological Journal.

Dr. Edebohls said that he didn't like Alexander at Abandoned it for six mouths after first five operations, and used anterior abdominal fixation. Didn't like the latter, because of the adhesions. He thought Alexander most nearly restored the uterus to its normal position, and most nearly allowed it its normal mutability. It did not fix the uterus by adhesions, nor bend it, nor tie it down to the vagina. duced good and permanent anatomical results, if properly performed. The therapeutic results depended upon the clearness of the indication for operation. Absolute indications: freely movable retroversed uterus, and perfectly normal tubes and ovaries. One accident was caused by failure to recognize a small ovarian cyst. He had satisfactory therapeutic results by observing these indications. If retroversion returned, operation had been incorrectly done. In one failure, the operator had been unable to anteflex the uterus at the time of the operation. Hernia might He had had two cases. One woman became occur. pregnant three weeks after leaving the hospital, and had a well-marked hernia after several months. the other case he operated both for retroversion and hernia, and hernia returned. Since he began closing inguinal canal, and uniting ligament with buried silkworm-gut sutures, he no longer feared hernia. The operator needed fine anatomical dissection, which only certain methodical minds were able to give perfectly. Failure was always due to lack of pursuing a certain measure carefully. He knew of no operation in gynecology more beneficial if properly done in proper

Dr. Cleveland said he had taken up Alexander slowly, and only in the last few years. thirty cases, with results good enough to make him Round ligaments are intended for a good continue. purpose; they are fibro-muscular, and well adapted for suspending the uterus in its normal position, if there be such a thing. Indications should be as Edebohls said; though in some cases existing adhesious had been separated, and operation done with good results. Edebohls's operation was not identical with I know this view differs sutures were unnecessary; suture the round ligament very well. Perhaps after having done it fifty or a likely to follow the appearance of pus (or incorrectly

inserted sutures). Knet sutures under fascia; one and a quarter inch incision enough, except in a very fat person. In cutting down on the canal, feel for the least resisting point; this is the ring. Pressing thumb and finger on either side of ring, cut intercolumnar tissue, and bulging cushion of fat appears. Grasp this with forceps, and almost sure to get ligament, which is drawn down and sutured with silkwormgut. Don't cut ligament after suture. Pass Hagedon, with carrying thread, under fascia, at lower angle of incision, and out on mons, three-quarters of an inch below; end of ligament put in loop of carrying thread, pulled through, sutured, and cut off. Necessary to draw ligament four inches out, to antevert uterus enough to make it remain. Afraid of buried silkwormgut; had trouble from it. Used kangaroo tendon instead. Draining, like Edebohls, with silkworm-gut; removed them in twenty-four hours (Edebohls in one Two months necessary for sufficiently strong union. He recommended pessary for three months; though there were good results in some cases without Thought ligaments, even small ones, strong gb to hold uterus. Believed in old operation enough to hold uterus. where sutures remained temporarily, but should stay in four weeks; then, after removal, a canal was left which gradually filled up with fibrous tissue, holding uterus firmly. Had recently seen patients twelve months after operation. Position good, all symptoms relieved. When this is not the case, there must be adhesions, or ovarian disease not discovered. Alexander is a good operation.

CHRONIC TUBERCULAR PERITONITIS IN CHILDREN.¹

BY FRANK E. PECKHAM, M.D., PROVIDENCE, R. I.

This paper will be confined to the chronic tubercular peritonitis in children where the disease is not due to tubercular extension from the lungs, pleuræ or some neighboring organ or structure, but to a tubercular peritonitis which in itself constitutes the disease.

It may begin very slowly and almost imperceptibly, or it may come on suddenly with very acute symptoms. Beginning gradually, the first symptom which attracts attention is the enlarged abdomen; and at the same time the child begins to lose flesh, although this is not very marked in the earlier stages of the disease. This enlargement consists of some tympanites and more or less fluid in the peritoneal cavity. This may subside in a few weeks or months if not interfered with, but is pretty apt to recur as the disease continues its course.

Some cases will recover, just as we see some cases of tuberculosis of the lungs recover under favorable circumstances; but the usual course of a tuberculosis, unless arrested by some active interference, is a steady advance towards a fatal ending.

If the fluid disappears or (what up to within a few years has been the usual treatment) has been removed by tapping to give relief, then the enlarged tuberculous glands may be felt by palpation; and in the later stages of the disease, masses and constricting bands may also be felt. The masses are composed of patches of omentum matted together, and the bands are formed by adhesions. These masses are sometimes very large, and give one the impression of a solid tumor.

¹ Read before the Medical Improvement Club of Providence, June 18, 1894.

If the disease is uninterrupted in its course, the child becomes emaciated, there is loss of appetite, and the hectic fever of tuberculosis may be present. The child will naturally assume the position so common in peritonitis, lying flat on the back with the knees drawn up; and many cases are so sensitive that to jar the bed causes pain.

As the patient lies on the back in bed, the fluid will remain in the flanks and the tympanitic intestines will naturally gravitate to the epigastric region. Percussion will then demonstrate the presence of fluid, the area of dulness changing with the changed position of the body. The fever does not run so very high, 100° to 102.° The bowels may be constipated or diarrhea may be present. In the later stages other parts of the body may become involved, especially the lungs.

In marked contrast to the course of the disease just described, the onset may be sudden, with abdominal pain, considerable tympanites, vomiting, coated tongue and high fever. The whole course of the disease in such a case would be much more severe and the termination much quicker.

Fluid is not always present in this tuberculous process, and when present the amount is not usually large. The most frequent cause of abdominal effusion is cirrhosis of the liver. During the atrophic stage, the portal congestion results in effusion, and any marked congestion in the portal circulation would also cause some splenic enlargement. Therefore a careful examination of the outlines of the liver and spleen would eliminate cirrhosis. An effusion from cardiac and renal disease would be eliminated by an examination of the heart and urine. Pressure effusions from neoplasm, etc., would be recognized by palpation, and the history of the onset would also be of assistance.

The prognosis in these cases is excellent, the deathrate being about three per cent.; and even in the three per cent. that die the operation does no harm, and may prolong life even if only for a short time.

If the lungs have become involved, it is not a contraindication to operation; for if only slightly affected, when the primary disease in the peritoneum is checked, this may all clear up. On the other hand, if the disease in the lungs is well advanced, operation is still indicated for the relief it affords, for the improved condition and for the additional strength imparted.

TREATMENT.

The treatment formerly was medicinal and waiting for the end, which was almost invariably fatal.

Then a little later, in the cases where the fluid collected in large enough quantities to distend the abdomen markedly, this was removed by paracentesis to give relief. Usually it reaccumulated; and repeated tappings were necessary, until the child, emaciated and exhausted, succumbed to the inevitable. It was especially in this class of cases, after several tappings, that the constricting bands and lumps were to be felt.

Next we come to treatment by laparotomy, and doubtless you are all familiar with the fact that Sir Spencer Wells did the first one by mistake, opening the abdomen for what he supposed to be an ovarian tumor, and finding tubercular peritonitis present, in which a cyst had been walled off by the inflamed peritoneum. The abdomen was closed, and the patient recovered. This was in 1862. Since then, laparotomy has come to be the recognized treatment in such cases; and the method has been perfected, until now the

drainage-tube is dispensed with, the abdomen closed, and union by first intention obtained.

There have been various theories advanced as to why a laparotomy should result in a cure of the disease. At first, an antiseptic solution was used in washing out the abdomen, but it was necessarily so weak that it seems impossible to believe that it alone had much effect upon the tuberculous process. Boiled water was gradually substituted for the antiseptics, and is now generally used.

It has also been held that it was contact with the air which caused this miraculous result; and Nolen has concluded from a number of observations, that the injection of sterilized air into the peritoneal cavity through the opening made for the evacuation of the fluid, is sufficient for a cure. He has tried it in three cases. In two the cure was permanent. In the third the patient was too much exhausted prior to treatment to have recovered.

If this method should prove to be efficacious, yet it cannot be attempted as early as a laparotomy, for in both my cases to be reported here the amount of fluid was so small that the entering needle might have punctured the intestine, and probably such a small quantity would not have flowed through the canula but would have remained in the pelvic region.

Yet another method of treatment is the injection of a ten-per-cent. emulsion of iodoform and glycerine; but I have seen no results published as yet which would lead me to try this method.

Given a case with considerable fluid present, paracentesis, with the injection of sterilized air, might be given a trial; and in case the abdomen refilled, a laparotomy would be in order.

Given a case in the early stages, with a small amount of fluid, a laparotomy would be the most rational treatment.

I shall report two cases, one operated as a last resort and the other in the early stages, showing the results at the two extremes of the disease.

The patient was a girl, ten years of age. Case I. Another child in the family had died about a year before of "consumption of the bowels." Patient had been sick for about six months, gradually losing flesh and complaining of pain across the abdomen.

When I saw her early in December, 1891, she was ry much emaciated. There was quite severe abdovery much emaciated. minal pain, which interfered with sleep at night. She was practically confined to bed, being lifted into a large rocking-chair for a portion of the day. lying in bed, the knees were flexed and the face wore a painful expression. The weight of the clothes caused discomfort, and even a jarring of the bed caused pain. There were several loose, watery movements daily. She was taking very little nourishment.

Physical examination revealed an extremely tender abdomen, some tympanites and a slight dulness, which changed its location as the child was slowly turned from one side to the other. In this case the lungs had become involved, and so, of course, made the prognosis anything but favorable.

Several cases having been reported where the lungs were affected and the whole thing had cleared up after operation, I concluded that an operation was justifiable as a last resort. For the week preceding operation the temperature had ranged from 100.5° to 101.5°.

On December 8th, with the usual antiseptic precau-

three inches in length. Drs. Day and H. P. Abbott assisted. At the line of incision the peritoneum was adherent to the abdominal wall. About three ounces of fluid were found free in the abdominal cavity. No tuberculous foci could be seen upon the parietal peritoneum; but it was markedly injected, and was adherent upon the right side of the abdomen but not on the left. The intestinal peritoneum was covered with tuberculous points varying in size from a millet seed to that of a small pea. The mesenteric glands were also enlarged, some of them being as large as marbles. The abdominal cavity was thoroughly irrigated with hot boiled water, and carefully sponged out. Silk sutures were used, and made to include skin, muscle and peri-The wound was closed without drainage. toneum. Baked dressing applied.

Everything went along smoothly. The bowels were quite readily controlled by bismuth. The abdominal pain was no longer troublesome, the patient being able to sleep and so was much refreshed. There was firm union by first intention, and all the stitches were removed on the tenth day.

By the end of the second or the beginning of the third week, the patient was about the house, feeling and looking much better. The pain in the abdomen gave her no further trouble, and there was no reaccumulation of fluid. The tuberculous process in the lungs, however, was not checked at all, but continued on its course; and early in the fifth week the little patient yielded to the inevitable.

Even in such an extreme case, a laparotomy relieved the abdominal symptoms, and undoubtedly prolonged life, although for a short time.

Case II. Patient was a girl, five years of age. The mother died with phthisis about a year after the birth of the child. She was a native of the Cape de Verde Islands. The father is a strong, healthy laboring-man. Until the present sickness the child has always been healthy. For about ten days previous to my first visit, the child had not been feeling well, complaining of headache and loss of appetite, and insisted on being held in the lap most of the time. Did not sleep well at night, tossing restlessly about a great deal of the time.

I saw the patient for the first time January 21, 1894. The face wore an expression of pain, and she complained of pain across the abdomen. A slight cough was noticeable. Tongue slightly coated. I constipated. Temperature 103°. Pulse 120. moaned continuously, but was told this was more pronounced while I was present, apparently on account of fright.

Physical examination showed that the lungs were all right, not an abnormal sound to be heard anywhere. The abdomen was somewhat distended and tender to the touch. Very slight dulness was present, changing from side to side as patient was turned, the upper side being tympanitic. No diagnosis made, but a suspicion of tubercular peritonitis entertained.

January 22d. Condition remains same. Temperature 103°. Pulse 100. Another careful examination shows nothing in chest, but the same very slight dulness in abdomen on percussion. Liver normal in size. Spleen not enlarged.

January 23d. A third slow and careful examination still brings me to the same conclusion. Temperature 103°. The dulness is so slight that before advising tions, a median incision was made two and a half to operation I asked Dr. Day to examine the patient without telling him my conclusion, in order that he might arrive at a diagnosis without any influence. He made a very careful examination, finding nothing in the chest, but did find the same slight dulness, which would change from side to side as patient was turned, and thought just as I did that it must be a tubercular peritonitis. I immediately advised operation, as really the only method of treatment, and at this early stage of the disease the prognosis would be excellent.

January 30th. The temperature the day before the operation was 102°. Everything having been prepared, the abdomen was opened by a median incision about two and a half inches in length. Dr. Day and Dr. E. B. Harvey assisted. The peritoneum looked perfectly healthy, and was not adherent anywhere. There were not over two drachms of fluid in the peritoneal cavity, which was sponged cut. A small quantity of boiled water was poured into the abdomen, and immediately expressed rather than sponged out. The wound was closed with one set of silk sutures, including the various layers. Sterilized dressing applied.

January 31st. The morning after operation the temperature was normal, and remained so throughout convalescence. The dressing was removed for the first time on the tenth day. There was perfect union,

and the stitches were removed.

The appetite returned immediately after operation; the tongue cleared up. The child was anxious to get up, and was with difficulty kept in bed the two weeks, at the end of which time she was allowed to get up with an abdominal bandage applied.

The child has remained well, except in the latter part of May, when I attended her through an acute lobar pneumonia. She is now in excellent health, with

no return of the ascites.

Clinical Department.

A CASE OF ACCIDENTAL CONCEALED HEM-ORRHAGE.

BY EDWARD REYNOLDS, M.D.

On March 29th, I was asked by Dr. E. L. Twombly to see with him a patient with the following history:

The night before, when eight months pregnant, she had begun to suffer moderate labor-pains, and after they had continued a few hours felt very faint; but on Dr. Twombly's arrival, shortly afterwards, she appeared in her usual health. Slight labor continued during the night, and early in the morning she again felt faint. There was at this time an external discharge of a small amount of reddish sero-sanguinolent fluid. She had been rather over-active for several days, but there was no history of any accident.

When I saw her, at about 9.30 A. M., March 29th, her face was pale and slightly drawn, and her lips considerably blanched; the pulse was very feeble, but its rapidity was only 60. I regret that I did not count it at the heart, as its character and the subsequent history leads me to think that I should have found a greater rapidity there. On palpation the uterine parietes yielded to the fingers some slight suggestion of an undue tonicity. The contour of the uterus was uniformly rounded, with the exception of a spot on the left side of the fundus, where a circular area of about six inches in diameter seemed to project slightly above

1 Read before the Obstetrical Society of Boston, April 14, 1894,

the general level and to be of a softer consistency. The fetal heart was absent. On vaginal examination the cervix was found firm and resistent, not at all shortened; the internal os barely admitted the finger to the surface of the membranes; the head presented; no previa was felt. There was, at this time, no external bleeding.

I was inclined to make a diagnosis of the existence of an internal concealed hemorrhage, but in view of the rigidity of the cervix thought that any attempt at immediate delivery would be extremely hazardous, from the grave liability which I thought existed, that a profuse hemorrhage might start up while the os was still but partially dilated and undilatable. I recommended a policy of inaction, except in so far as it might be possible to expedite labor by cautious stretching of the os at intervals with the fingers, without ether.

I saw the patient again at one P. M. Her condition was then unchanged, except that the labor-pains were stronger and the cervix decidedly shortened. There

had been no further hemorrhage.

At eleven P. M. I was again called, to find the accessory tumor larger, the patient decidedly more feeble, the uterus in a state of marked tonic contraction, the cervix spasmodically rigid, and the os about a third dilated, the membrane still unruptured. The patient was at once etherized: under ether the os became thoroughly relaxed, and was easily stretched to an almost complete dilatation by the hand. The membranes were then ruptured, and a considerable amount of liquor amnii, slightly tinged with blood, escaped. The patient was allowed to recover from her ether, and within five minutes a dead, but unmacerated, eight months' fetus was expelled from the vulva. The birth of the body was followed by the spontaneous and forcible expulsion of the placenta, with from a quart and a half to two quarts of dark clot. On examination of the uterine aspect of the placenta, it was found that small, firm clots existed in the spaces between the cotyledons over the greater part of its surface. The mother's recovery was uninterrupted.

The history of this case, together with that of the very similar case which I reported to this Society two months ago, leads me to question somewhat the correctness of the position I have hitherto held in regard to the treatment of these most alarming accidents.

In 1891, in the course of a discussion before the American Gynecological Society upon the extremely able paper of Dr. Henry C. Coe on accidental hemorrhage during the first stage of labor, I stated my own opinion that this hemorrhage could be checked by one means and by one means only, that is, by securing contraction and retraction of the uterus after the delivery of the child, and advocated that measure for all cases where the condition of the patient is not so bad as to preclude all interference. That opinion was based not only upon my small previous experience with this rare accident, but upon the statistics of the operation previously published in the paper referred to, which is, so far as my knowledge extends, the latest statement of the experience of the profession on this subject; Dr. Coe places the general mortality at 51 per cent., the mortality under the expectant treatment at 75 per cent., and that which attends immediate delivery at 30 per cent. I am led to question whether, with regard to treatment, we are not bound to classify the cases in accordance with the severity of the symptoms and the condition of the cervix. It is theoretically possible that there may be cases in which the strength of the uterns is sufficient to keep the hemorrhage within bounds for a length of time sufficient to allow a dilatation of the os to occur, or, at least, softening of the cervix by the natural forces. Upon the other hand, no obstetrician of experience will doubt the statement that a dilatation of the rigid cervix may well occupy sufficient time to allow the hemorrhage to become fatal if it should start up during the operation, an accident which the history of these cases shows to be not unusual.

The treatment which I should propose for myself in future cases of this desperate nature is as follows: If the hemorrhage is from the start so profuse as to occasion great distention of the uterus and an early and alarming collapse of the patient, a large majority of the women will be lost under any method of treatment; but I still believe that a prompt delivery then offers the only chance that there is for the life of the mother

[The question of the possibility of saving such cases by the prompt performance of Porro's operation has been suggested, but the time does not seem to me ripe for more than the merest mention of this question.]

If the onset of the hemorrhage is gradual, if the initial collapse is not extremely alarming, and the progress of the hemorrhage seems to have become arrested before any extreme distention of the uterus occurs, I shall determine my choice of treatment by the condition of the cervix. If this is so rigid as to offer a prospect of extreme difficulty in its dilatation, I shall confine myself, as in this last case, to efforts at promoting the action of the natural forces by moderate dilatation of the os with the fingers, stimulation, and other measures intended to sustain the strength of the patient. But I wish to be understood that if this method of treatment is adopted, a physician competent for prompt delivery must be continuously by the bedside of the patient and ready to interfere.

If, in this latter class of cases (with limited hemorrhage and moderate collapse), the conditions are such as to warrant the belief that immediate dilatation and version will be reasonably easy, I believe that will offer the best chance of saving the patient. The life of the mother is always so seriously endangered, and the fetus has in the past so rarely been saved, that the existence of the latter should ordinarily be left out of consideration in determining the plan of treatment which should be adopted.

SPONGE BATHS AND FULL BATHS IN TYPHOID.

BY RICHARD C. CABOT, M.D.

During the summer of 1893, both sponge baths and full baths were used for typhoid cases in the service of Dr. E. G. Cutler at the Massachusetts General Hospital. With his kind permission, I report results observed in 1,000 baths given while I was interne there.

Out of this number only 200 were full baths, as it was only at certain times of the day that two ward-tenders could be had to lift the patient in and out of the bath. To children light enough to be moved by one attendant, only full baths were given.

The body of the tub used was of rubber cloth, hanging from a frame of oak which was supported on four legs with castors and rolled to the patient's bedside.

It was filled and emptied in the ward by means of a rubber tube connected with a sink outside. All baths, whether by spouging or in the tub, were given once in four hours in case the temperature was at or over 102.5° F.

Tub baths were all at 65° F., and lasted twenty minutes, vigorous skin friction being given throughout.

Sponge baths were given according to a schedule, starting with 65° F., for a fever of 102.5° and using water five degrees colder, for each one-half degree of fever above 102.5°. For a temperature of 103°, the bath was at 60°; for 104°, 50°; for 105°, 40°; above that, ice-water.

Sponge baths lasted half an hour, the patients lying on a rubber sheet, and the water squeezed and rubbed upon them with a large sponge.

Half an hour after each bath the temperature was recorded again.

Eight hundred sponge baths gave an average drop in the temperature half an hour after, of two-fifths of a degree, Fahrenheit.

Two hundred tub baths gave an average drop in temperature of two and two-fifths degrees, Fahrenheit.

After a tub bath the temperature often fell to normal or even subnormal. The largest single drop was from 105.5° to 96.5°. This was in a child of six. No untoward results followed in this case nor in any other.

The number of baths needed under the tub-bath system was much less than under sponging, for after a full bath it often took eight hours, and sometimes twelve, for the temperature to get up to 102.5° again.

Sponge baths brought the temperature to normal only three times in 800 baths given. Not infrequently the temperature would be from one-fourth to two degrees higher after a sponge bath than before, and in a few cases this happened after tub baths.

After the first almost all patients liked the sponge bathing, but not one liked the tub at any time.

Shivering, cyanosis and feeble pulse were the rule after a tub bath, and lasted generally about twenty minutes. One patient always shivered so as to shake his bed for nearly an hour after his bath. He made a good recovery.

These symptoms were very slight after sponge baths. After all baths patients were wrapped in blankets, and sometimes half an ounce of whiskey was given. I was generally present to watch each patient during his first tub bath, not after that, unless for some special reason. Hemorrhage or perforation were the only counter-indications for a bath.

Ward-tenders lifted the female patients to and from the tub wrapped in a sheet. The baths were given by the nurses.

The course of cases treated by tub baths did not materially differ from that of those sponged, so far as observed. For relief of delirium, insomnia, stupor, twitching and other nervous symptoms the sponge baths seemed to answer as well as the tub baths, and were unquestionably less fatiguing to the patient.

The number of cases is too small to draw any conclusions as to the effect on the mortality. The above facts are reported simply to show the great superiority of the tub bath in reducing temperature (supposing that to be desirable), and the absence (so far as observed) of any difference in the effect of the two methods of bathing on symptoms referable to the nervous system.

Reports of Societies.

THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

MEETING, April 14, 1894, the President, Dr. CHARLES M. GREEN, in the chair.

Dr. J. G. Blake read a paper entitled

THE DECLINE OF THE PESSARY.1

Dr. G. H. Washburn reported some cases of retroversion.

DR. F. H. DAVENPORT said: The sentiment in regard to pessaries had changed in the last ten or fifteen years. They were formerly looked upon as a definite method of cure in the majority of cases, whereas now they have come to be regarded as useful in relieving symptoms in many cases, as affording temporary relief, but as curative in a very small proportion. This change of opinion is largely the result of the development of the various operative procedures for the relief of backward displacements.

I have recently been interested in studying my cases of uncomplicated retroversion and retroflexion treated by pessary, with the object of ascertaining the ultimate results, and helping me to decide in what proportion of cases operation was necessary or advisable. I found that in only a very small per cent. (ten or twelve) was there a perfect cure both anatomically and symptomatically; that is, after a longer or shorter use of the pessary, the uterus remained in its normal position, and the patients were relieved of their symptoms. larger per cent., which I should estimate roughly at thirty per cent., there was symptomatic cure; that is, after removal of the pessary the uterus returned to its old retro-displaced position, either partially or fully, yet the patient suffered no inconvenience from it. This is not strange when we consider that a backward displacement does not necessarily of itself cause symptoms. Undoubtedly, many women go through life with such a malposition without ever being conscious of any trouble.

The rest of the cases were either obliged to wear the pessary constantly, or were advised to have some operation performed for their relief.

In my experience there are very few cases which cannot be fitted to a comfortable pessary, and the nece sity for a resort to the Alexander operation does not often occur. The operation is not a simple one in the sense that it may not have unpleasant after-effects. The wounds may suppurate, there is apt to be pain and dragging on the incisions for weeks or possibly months, the uterus does not always hold, and the patient is not always relieved of her symptoms. For these reasons I recommend the Alexander very seldom, not because I do not believe fully in its use in suitable cases, but because such cases present themselves rarely.

Dr. A. Worcester said he felt greatly in doubt as to the value of the Alexander operation. The simple cases, where the uterus is freely movable, are easily relieved by pessaries holding the uterus in place. The difficult cases, where there are uterine adhesions, are not proper cases for the Alexander operation, for it is not right to tie a uterus forward that is constantly pulled back by adhesions. In three or four cases he has done laparotomy, cut the adhesions after properly

¹ See page 285 of the Journal.

ligaturing them, and has performed ventral fixation of the uterus. This seems to him a more rational method as one can see exactly what he is doing.

DR. J. G. BLAKE said that very few men now do an Alexander unless the uterus is perfectly freely movable. The field for this operation is narrowing.

DR. WORCESTER said that uteri which may seem perfectly freely movable, on bimanual examination are often bound by adhesions. Packing and massage may loosen these, but still they exist.

DR. W. E. BOARDMAN said that the pendulum was swinging strongly at the present day in the direction of surgical interference for all gynecological ills. He had had considerable experience with pessaries, and had considered himself successful in the results obtained. Often we have a return of the trouble, but with each return the patient is more quickly relieved. He has seen cases of Alexander where there was no relief, others where the suffering was greater than before the operation. He feels sure that the cases where the operation is really demanded are comparatively few.

DR. E. J. FORSTER, since the first of January in his service at the City Hospital, has been watching for indications for an Alexander, but has found none that could not better be remedied by curetting and repairing lacerations.

DR. EDWARD REYNOLDS said that what he would have said had been said almost word for word by Dr. Davenport. He believed that all discussions as to the value of the Alexander operation should be limited to the movable uterus, and that an Alexander should never be done in place of repairing lacerations or curetting.

The question then lies between the pessary and the Alexander, and he believed that the answer depended on the class of society to which the patient belonged. In classes who could take care of themselves and are not laboring, the Alexander he considered unnecessary, whereas among the ignorant and working women the Alexander could be employed more efficiently, as the use of pessaries was apt to result in harm.

DR. GEORGE HAVEN said that he had found in working women perfect results from the Alexander operation for a year or eighteen months. After that backache recurred and the uterus was found to be as retroverted as ever. In women who do not have to work and are able to rest, but who cannot wear a pessary owing to nervous symptoms, the results of the Alexander operation are very good.

DR. DAVENPORT: I wish to emphasize one point which Dr. Washburn made, namely, that often by some slight modification in the shape of a pessary it can be made comfortable. I have a number of times with bulb pessaries so hollowed out one side or the other or the middle as to relieve pressure on a prolapsed ovary or a tense, sensitive sacro-uterine ligament. Attention to the special condition of the case will often result in a satisfactory solution of a difficult task in the fitting of a pessary.

DR. Č. M. GREEN said he had found the continued use of pessaries still a useful thing, notwithstanding the advent of Alexander's operation. Patients can wear pessaries without being conscious of their presence in the vagina. If there is any discomfort from their use, he would consider the physician at fault in not using the proper pessary, rather than that the pessary per se was to be blamed.

DR. BLAKE, in closing the discussion, expressed surprise at the Society's qualified endorsement of the Alexander operation, and the continued belief in extensive use, by many members, of the pessary. It was certain that for years the great body of eminent gynecologists were dissatisfied with their results, looking upon it as a temporary expedient or makeshift, hence their efforts to find a substitute in the various methods of ventro-fixation. That one satisfactory to everybody has not been found is not surprising, but that a substitute yielding admirable results to those who have worked steadily, patiently and perseveringly on the class suitable for the operation, judging by their results, is to them no longer a matter of doubt.

Dr. Edward Reynolds reported

A CASE OF ACCIDENTAL CONCEALED HEMORRHAGE.2

DR. C. W. TOWNSEND asked, and the question was seconded by DR. A. WORCESTER, how the operator dared to wait after having made the diagnosis of internal hemorrhage, with a pulse already very weak from loss of blood. Might not a slight loss of blood further render the operation of version of no avail? The results in this case certainly justified his action, the delay making the complete dilatation of the os a simple matter, but should this case be an example for treatment in other similar cases? They believed not.

Dr. Edward Reynolds said that he knew the conservative treatment he had adopted was radically opposed to the routine treatment of immediate delivery in cases of concealed hemorrhage, but he believed that each case should be judged as it merits, no one method being used for all. Moreover, the English statistics bear out the value of conservative treatment in these cases.

AMERICAN GYNECOLOGICAL SOCIETY.

NINETEENTH ANNUAL MEETING, WASHINGTON, MAY 29, 30 AND 31, 1894.

THE meeting was called to order by the President, Dr. WILLIAM T. LUSK, at 10 A. M., Tuesday, May 29th.

ADDRESS OF WELCOME.

DR. FRY, of Washington, read a brief address, welcoming the members to Washington again, where, in accord with the rules of the Congress, the meetings were to be held every third year.

EXTIRPATION OF THE UTERUS IN DISKASE OF AD-

The discussion upon this subject was opened with a paper by Dr. J. M. Baldy, of Philadelphia. He said the question of the propriety of removing the uterus where it was necessary to remove the adnexa could only be determined by experience. Related questions were: (1) Is the uterus essential or useful after the ovaries have been removed? If not, are all patients cured after operation for double ovariotomy? (2) Are patients cured by hysterectomy after double ovariotomy has failed? (3) Does removal of the uterus at the time of removing the adnexa add to the mortality?

The author proceeded to answer these questions categorically. The uterus has but one use in the body, he said, that of containing and nourishing the embryo. It is not true, as has been held, that it has anything to

² See page 289 of the Journal.

do with those peculiarities which go to make woman womanly. This duty rests with the ovaries; nor is it necessary in the support of the vagina. The cervix, if useful in rounding the vault of the vagina, could be allowed to remain where cancer or other condition did not demand its removal in the particular case. That all cases are not cured after removal of the adnexa is a fact which has been attested by the experience of all operators. The second question is answered in the affirmative by the author's limited experience, namely, that patients not cured by double oophorectomy are cured by subsequent removal of the uterus - cured of leuchorreal discharge and of pain. His own experience had been that extirpation of the uterus in connection with the tubes and ovaries had not added to the fatality of double oöphorectomy alone, while it had been more effectual in relieving the symptoms permanently.

A fourth question, whether retention of the uterus is of any disadvantage to the patient, has certainly to be answered in the affirmative. It not infrequently is the seat of a discharge, of disease, liable to become displaced, to undergo malignant degeneration, and, should the tubes have been tubercular as could only be determined with certainty after their removal, to be or become the seat of tubercular disease. Then, too, there were some cases in which the uterus should be removed at the time of removal of the adnexa, not because it was the seat of inflammatory or other form of disease, but because of adhesions and extensive denudation. Regarding the manner of operating, it should be by the suprapubic route. The only condition in which vaginal hysterectomy might be preferable was in cases of large pelvic abscess accompanied by dense adhesions which it would be impossible to successfully separate.

HYSTERECTOMY IN BILATERAL DISEASE OF THE AP-PENDAGES.

DR. FLORIAN KRUG, of New York, continued the discussion with a paper. He said that careful observation devoted to cases through some time, demonstrates that while pathologically they are cured, few are symtomatically relieved by removal of the adnexa. The cause of failure to accomplish all that might be desired lies in our failure to remove the original and persistent source of infection. The question simply resolves itself into this, that either the cases operated upon by those who claim that the uterus when left is not a cause of further symptoms and may be rendered innocuous by mild treatment, are not thus cured, or else gentlemen making these statements have submitted to their skill the most simple cases as a rule, and in the severe ones have failed to observe the results of their work. The cause of continuance of distressing symptoms is the primary lesion in the diseased uterus; the adhesions formed between the intestines and raw surfaces in the pelvis; the possibility of repeated inflammations of the uterus; the possibility of ventral hernia owing to the different methods of drainage; and many other lesser lesions, together with malposition natural to a uterus repeatedly inflamed and deprived of its natural supports.

The following reasons and the results of his experience, appealed to Dr. Krug for removal of the uterus where it was necessary to remove the adnexa. The uterus without the adnexa is a useless organ and devoid of physiological function; it is not innocuous,

a harmful organ. Histologically the tubes are but part of the uterus, and therefore removal is partial amputation of the uterus; therefore, why should we not go a step farther and remove the rest of the diseased organ. Is it conceivable - clinically is it a fact call tubes are alone diseased and not the rest of the uterus? Leaving the uterus merely invites future infection. The artificial menopause is easier after removal of both uterus and appendages than after removal of the appendages alone. In Dr. Krug's experience, the complete operation is attended by less mortality than the incomplete.

That he might not be misunderstood, he said that he wished to emphasize the fact that he was dealing tion whether the uterus should always be removed solely with those lesions of the adnexa which unquestionably demanded their removal, where both were the seat of disease precluding the possibility of cure by all to do hysterectomy were malignant disease, uterine conservative methods.

Dr. H. T. HANKS read the next paper upon the same subject. He said the question whether the uterus should be left in or removed in any given case of disease of the adnexa could only be determined by the character of the disease, the condition of the uterus, and the experience of the operator. Leaving out the question of fibroids and malignant disease, he believed we were justified in doing suprapubic hysterectomy where the operation could be completed within fortyfive minutes, in the following conditions: "Pyosalpinx when there is possibly a purulent or chronic endometritis; for puerperal metritis or perimetritis of a purulent character; for chronic salpingitis when the uterus, tubes and ovaries are diseased, displaced, and embedded in plastic exudation. There are other conditions, undoubtedly, in which I would advocate extirpation of the uterus, but in these three classes of cases I have had actual experience, and the results have justified these conclusions."

Dr. Bache McE. Emmett, of New York, was the first reader on the programme to take the negative side of the question. The question, he said, had been fairly before the profession for six months, or since Dr. Polk read his paper before the New York Obstetrical Society last fall. Taking that paper and the remarks which it had elicited from Dr. Krug as the basis of his own remarks, Dr. Emmett assumed that what gynecologists were asked to do was to remove the uterus in all cases calling for removal of the adnexa. It was not a question, he said, whether it was legitimate to do hysterectomy when the adnexa were removed in fibroid and malignant disease, nor in suppuration within the pelvis where hysterectomy would give the best possible drainage, nor in cases of pus within the uterus or pus sac with spreading peritonitis.

Excluding these cases, and confining his remarks to the question of more limited area, Dr. Emmett was ready to take the negative side. It had been claimed dictated by the position. that without hysterectomy some disease might be left at the uterine end of the tube; but this, he thought, could be obviated either by deeper incision or the use of the cautery. As to disease possibly springing up in the uterus after double ovariotomy, no one, he supposed, could say positively that it would not; but it was his opinion that where more than atrophy had taken place the trouble with the uterus was independent of removal of the adnexa, or was due to fail-

but, on the contrary, positively diseased and therefore | quently, to imperfect diagnosis, or to incomplete removal of the adnexa. He agreed with Dr. Coe, that those who advocated removal of the uterus along with the tubes and ovaries, underestimated the additional shock due to the hysterectomy.

Dr. W. GILL WYLIE, whose name also appeared -that these projections of uterine tissue which we upon the negative side, thought the further discussion which had taken place upon the subject since Dr. Polk had written his paper, went to show that there was more apparent than real difference of opinion between the speakers. The only remarks to which he seriously objected were those of Dr. Krug, who had said that in all cases in which the tubes and ovaries were completely removed, one should remove the uterus also. If he were asked to say yes or no to the queswhen the tubes and ovaries were removed, he would say, no. The conditions under which he would go on fibroids, indications of septic disease within the uterus or other incurable affection and, as a rule, where the patient had passed the age of thirty-five, but more especially forty. Removal of the uterus with the adnexa must always be a more dangerous operation than removal of the adnexa alone, although it might not so appear in a limited number of cases.

> Some verbal discussion took place upon the subject by Drs. Wathen, Byford, Edebohls, Cushing, Mc Kinloch, Janvrin, Gordon, Noble and A. P. DUDLEY, nearly all of whom would object to the statement that the uterus should be removed in all cases calling for removal of the adnexa.

> Dr. Krue, in his closing remarks, explained that his reason for taking the affirmative upon this point was the fact that where complete removal of the adnexa was indicated there was always disease of the uterus.

THE MANAGEMENT OF FACE PRESENTATION.

The first paper in discussion on this subject was by DR. EDWARD REYNOLDS of Boston. His conclusions were as follows:

When a face presentation is detected, before the engagement of the face and before rupture of the membranes occur, there is always reason to hope for spontaneous restoration of flexation. The obstetrician should, therefore, confine himself to the adoption of postural treatment and gentle external manipulation till the occurrence of engagement or rupture of the membranes renders spontaneous flexion possible. When the membranes rupture early, an external or bipolar version should be at once performed in any case in which the condition of the cervix renders manual dilatation of the os dangerous; but in ordinary conditions of the cervix manual dilatation should be undertaken immediately after rupture of the membranes: the head should be flexed by the hand, and the subsequent treatment should be operative, but its details should be

When the membranes persist until the cervix is completely dilated, an anterior position of the chin should be left to nature so long as its progress is rapid and the fetal heart is steady; but when any irregularity of the fetal pulse, or even moderate delay at the brim has been detected, the patient should be anesthetized and The posterior position of the occiput the head flexed. so produced should not be left to nature, but should be either treated by version or, preferably, rotated to the ure to curette the organ and treat it before or subse- front by the hand. It may then be left to nature or

treated by forceps. - Posterior position of the chin should never be left to nature even though the os has been completely dilated by the membranes, but such cases should always be subjected to immediate manual flexation. The anterior position of the vertex may then be left to nature or forceps may be used. In neglected cases in which manual flexation is contraindicated, version should be chosen if it is practicable, whatever the position of the chin. If version is contraindicated such cases should be treated by immediate application of forceps to the face as such; but in posterior positions of the chin this operation should always be preceded by rotation of the chin to the front. In cases in which the face presentation is due to some other mechanical obstruction, the treatment should be determined by the latter factor. The abdominal methods of delivery are never indicated in uncomplicated face labor.

DR. CHARLES JEWETT, of Brooklyn, read the second paper on "The Management of Face Presentations." In all cases it was desirable to know the relative size of the mother's pelvis and child's head. which might necessitate giving an anesthetic and introducing the hand. Other conditions might then be discovered on introducing the fingers into the uterus. In treatment two general classes of cases were recognized, namely, those in which the head was movable at the brim or could be made movable by pushing it up, and those in which the head was permanently engaged in the pelvis. In the first class, if the chin were anterior, interference might not be necessary. When the chin was towards the posterior half of the pelvis, if other conditions were favorable, spontaneous birth was generally possible. It could not be denied, however, that the child was more exposed to injury than in vertex cases. He therefore preferred to reduce the posterior presentation of the chin, if possible, to a simpler pre-The first choice was, as a rule, to bring down the occiput. Dr. Jewett also spoke of the influence of position and of the application of forceps in cases where there had been engagement in the pelvis during face presentation.

DR. C. P. NOBLE, of Philadelphia, said he had no formal paper to offer, as he was not very familiar with the subject, but he wished to suggest resort to symphyseotomy in cases of face presentation in which the waters had drained off, as being more likely to succeed and with less danger than version; and especially should symphysectomy be tried in posterior presentations, with the head fixed in the pelvis, demanding craniotomy or symphysectomy.

DR. E. P. DAVIS, of Philadelphia, said the best results in face presentation had been obtained in Germany, and implied that in that country the proper means were more commonly taken to make an early diagnosis upon which successful termination of these cases depended largely. When an early diagnosis was made, posture of the mother would have an influence; if the child's face looked to the left the mother should lie upon the left side, thighs flexed, the uterus being thrown as nearly as possible into the long axis of the body; she should lie upon the right side when the face looked to the right. Under these precautions it was quite possible for a face to change into an occiput presentation and the latter to be changed into a front occiput presentation. The likelihood of a face presentation going on favorably depended much upon the ting out the angle, as in trachelorrhaphy, did not cut relative size of head and pelvis, and one had to be out the disease. The disease was below the mucous

trouble arose without the interference of art, there was apt to be disproportion between the head and pelvis, a fact which constituted a strong argument in favor of symphyseotomy, and enlargement thereby of the pelvis in the diameters in which enlargement was most needed.

Dr. FRY, of Washington, emphasized the importance of posture in correcting face presentations, and suggested the use of Trendelenberg's posture in place of the knee-chest position, because of the great difficulty of applying the latter to a patient under anesthesia. The Trendelenberg posture could be employed by reversing a chair and drawing the patient's legs up over the back of it. He thought this position would aid materially in attempts to flex the head or perform version.

The president, Dr. Lusk, had performed symphyseotomy in a case of face presentation engaged in the pelvis after several physicians had badly injured the mother with forceps. He was surprised to find how easily the child could be extracted after doing symphyseotomy. The mother having been practically moribund before he saw her, died after a few hours.

There was some further discussion by Drs. R. A. MURRAY, H. T. HANKS, and others.

THE ABUSE OF TRACHELORRHAPHY.

DR. WILLIAM R. PRYOR, of New York, read this paper. The question of immediate closure of torn cervices was not under discussion. Trachelorrhaphy is performed, he said, for the cure of erosions, cervical hypertrophy, cystic degeneration, sterility, subinvolution, to prevent cancer, and for reflex symptoms, and perhaps some other conditions. Dr. Pryor went on to discuss these points in detail. His views upon them can be inferred from a few closing paragraphs:

Emmett's teachings, he said, have been so misapplied that now a condition (torn cervix) which is natural to the mother, is considered pathological and is subjected to operation. When the cervix uteri is so far advanced in disease as to require an operation, I do not believe trachelorrhaphy the preferable procedure. When the laceration is of such degree that a cosmetically perfect cervix can be secured by trachelorrhaphy, I do not consider any operation necessary. Erosion after labor requires the same treatment as in the virgin.

Hypertrophy in the parous woman needs the operation applicable to hypertrophy in the nulliparous. And those other conditions of the cervix which follow labor, whether associated with a slight or a severe laceration, necessitate the removal of more tissue than trachelorrhaphy secures.

The great objections I have to trachelorrhaphy are that it does not give a cervical canal of dimensions equal to the requirements of a woman who should, as she grows older, bear each successive child with greater ease and security than the preceding; it does not remove sufficient tissue where operation is indicated; and it does not appeal to me as a rational procedure, believing, as I do, that most of the cases subjected to it require no operation whatever on the cervix, inasmuch as a generous laceration is normal and necessary.

Dr. Byford agreed with Dr. Pryor, that the ordinary laceration of the cervix should not be united. If there was disease, it should be cut out. Simply cutguided to some extent by this fact in treatment. Where membrane; and where interference was called for, he

found Schroeder's amputation indicated in three out of

Dr. Baldy agreed with the remarks of Byford, while Dr. Noble considered the original paper, Dr. Pryor's, as revolutionary and without basis of fact. It was certainly a strong statement to say that the normal condition of the cervix in mothers was one of laceration. He, too, had done Schroeder's operation for a long time in certain cases, but they constituted a small proportion of those calling for repair of the lacerated cervix.

Dr. BAKER, of Boston, had seen more than one case in which he thought it would tax the obstetrician's ability very much to say that there had been laceration of the cervix from childbirth.

Dr. Gordon, of Maine, had long taught that lacerations of the cervix were often sewed up with injurious consequences because of narrowing the orifice, causing stenosis and giving rise to tubal and other disease.

MYOMECTOMY CONSIDERED AS A SUBSTITUTE FOR HYSTERECTOMY.

DR. E. C. DUDLEY, of Chicago, who read this paper, said that the objection to hysterectomy, depriving the woman of her reproductive function, was selfevident, and raised the question whether, in a certain proportion of cases at least, we might not have recourse to a substitute which should adequately remove the disease and at the same time preserve in whole or in part the uterus and its appendages. We already had this in the abdominal operation for pedunculated myomata and in the vaginal operation for intra-uterine and submucous myomata not larger than the fetal head, and in the operation through the sacrum for cancer. This later might possibly be applicable to some cases of myomata situated low in the posterior walls of the uterus. The special object of his paper, however, was the presentation of an operation for the preservation, when possible, of the reproductive organs in the surgical treatment of uterine myomata by laparotomy. Dr. Dudley had reported his first case so operated upon five years ago, in which the abdomen was opened, the uterine myoma enucleated, and the cavity thus left stitched into the abdominal wound. After giving details of the operative procedure, the author went on to say that two deaths during the first three years had discouraged him from extensive application of the method, but during the last two years he had operated in about twenty-five cases with no There was good reason, therefore, why the method should become more general, especially in cases where it was not necessary to remove the adnexa.

Discussion upon this paper, and upon Dr. Wathen's, was postponed until after the reading of the president's address Wednesday morning.

RETRO-PERITONEAL AND INTRA-LIGAMENTOUS TU-MORS OF THE UTERUS AND ADNEXA.

DR. WILLIAM H. WATHEN, of Louisville, treated of this subject in a systematic manuer. treatment had come to be attended by as low a mor-The dangers tality as ovariotomy some years ago. were: (1) hemorrhage - from separating the adhesions, from the capsule, from the denuded surface of the tumor, from injury of the uterine artery, arteries and veins, and inferior vena cava; (2) wounding the ureter, bladder and intestines. The causes of death

were hemorrhage, shock and sepsis. He operated in Trendelenberg's posture. There was no uniform way of treating the capsule. It might be drained or not drained at all. He advised against uniformly suturing the incision in the capsule. Dr. Wathen read a letter recieved from Dr. Battey regarding fastening the sac in the abdominal wall and draining in that direction, and the use of sulphurous acid (1-10) for washing out the tumor sac.

FATAL NAUSEA AND VOMITING OF PREGNANCY.

DR. EDWARD P. DAVIS, of Philadelphia, read a paper on this subject, and reported three cases. In 1888 Graily Hewitt had contributed a paper on severe vomiting during pregnancy, in which he drew attention to auteflexation and impaction of the pregnant uterus as conditions encountered in these cases and undoubtedly concerned in their causation. This condition was present in two of Dr. Davis's cases, while in the other a close examination of the uterus post mortem revealed the cervix composed of dense connective tissue arranged in whorls, and amidst this tissue were cysts, one an inch and a quarter in diameter, and the other half its size, undoubtedly retention cysts from retained secretion of mucous follicles.

In summarizing these cases, their significance to my mind lies in the fatal condition of anemia which was present. The literature of pernicious anemia in pregnant and puerperal patients affords abundant illustrations of serious impairment of the blood, sometimes accompanied by ulcer of the stomach.1 Atrophy of the gastric mucous membrane, often associated with hypertrophied polypoid villi, is not infrequently seen in pernicious anemia, in cases in which pain and coffee-ground vomit are familiar symptoms. The condition of the heart may be partially responsible for the substernal pain in these cases, while changes in the marrow of the bones of the thorax are thought by some to produce it (myelogenic leukemia). It is also a recognized fact that, in anemia, pain may be reflected to the central ganglia of the trunk, so that the substernal distress of which these patients complain may be properly considered as a reflex from an uterus in a pathological condition.

In conclusion, I desire to advance the following propositions, of which the cases reported are illustrations: Nausea and vomiting of pregnancy are dangerous in proportion as they induce pernicious anemia. Such a condition of danger is to be recognized by studying these cases in the light thrown upon them by the pathology of anemia. While it is possible that sudden and radical improvment may occur in cases in which a functional neurosis is the predominant factor, only when pernicious anemia is once established delay is dangerous, no matter at what period of pregnancy the patient is seen. While it is true that raising and sustaining an impacted uterus will relieve many milder examples of this affection, cases in which danger threatens should be met by prompt dilatation and emptying of the pregnant uterus, which are to be effected by modern surgical methods.

DRS. H. P. C. WILSON, GEHRUNG, REYNOLDS, ENGLEMAN, W. G. WYLIE, A. P. DUDLEY, and the author continued the discussion. It seemed there was usually a local condition to account for the persistent vomiting, which when removed relieved the patient; but when treatment usually directed to the cervix

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¹ Leube and Fleisch: Virchow's Archives, lxxxiii.;1124.

in the way of dilatation or removing any diseased condition, failed to give prompt relief, the uterus should be emptied - certainly before the stage at which blood changes begin to take place and the appearance of coffee-ground vomit.

PRESIDENT'S ADDRESS.

PROPER POSITION OF RECENT SURGICAL METHODS IN THE TREATMENT OF UTERINE FIBROIDS.

DR. WILLIAM T. LUSK read his address upon this subject Wednesday morning, and invited discussion There is nothing, he said, which in equal degree marks in gynecology the boundary line between the old order of things and the new as the recent discussions upon the surgical treatment of uterine myomata. In mentioning recent measures, certain points in the biology of uterine fibromata should not be forgotten. For instance, all were, he believed, agreed that myomata might remain of small size for many years, and in rare instances diminish or disappear In view of reported cases of this without treatment. kind it might be well in cases of uterine myomata of small size and causing little discomfort to wait a while before resorting to radical measures. A number of cases had been reported of successful treatment by ligating the uterine arteries.

A large amount of work was being done abroad in the line of removing uterine myomata through the vagina, although the method had so far met with little The operation was, of course, appliapproval here. cable only to tumors of small size, and was also contraindicated in multiple subserous fibroids, in inflammatory conditions, and in fixation of the uterus by old Doubtless more ready access could be adhesions. gained to the tumor by the plan of Péan - circular incision through the vaginal walls, separation of the cervical tissue from the surrounding walls, avoiding

the peritoneum.

Where radical operation was necessary, the vaginal method should take precedence over the abdominal where practical, in order to save the woman an abdominal scar, possibility of hernia, and the greater

shock attending abdominal operations.

When the tumor has been exposed and is found of medium size, the question of castration versus extirpation is a legitimate one, although it has been the Castration, fashion the last two years to discredit it. however, is no longer advocated in large tumors, cystic tumors, extensive adhesions; and it is questionable in tumors occupying the lower uterine zone and mainly ted by the uterine arteries. In all cases in which the abdomen is opened, the possibility of saving the uterus and appendages should not be lost sight of.

Regarding treatment of the stump, it was yet to be decided by final results whether it was best to entirely extirpate the uterus by the method so well described

Goffe, Dudley, Baer, and others.

A lengthly discussion took place upon the President's address, in connection with preceding papers upon tumors of the uterus, which was participated in by DRS. Polk, BALDY, CUSHING, DUDLEY, ENGLE-MAN, and others.

RUPTURE OF THE UTERUS: PALLIATIVE VERSUS SURGICAL TREATMENT.

won this subject.

It is improbable, he said, that any authority at present would advocate any specific treatment in all cases of rupture of the uterus. No one should argue surgical versus palliative measures in all cases, but should choose the method best suited to the particular case, being guided by the situation of the patient, availability of surgical skill, type of the rupture, manner of production, whether child has escaped into the peritoneal cavity, hemorrhage, condition of the uterus as regards sepsis.

By surgical measures was meant not alone laparotomy with or without suture or removal of the uterus, but also drainage with or without antiseptic irrigation. Under palliative measures were included supporting methods, relief of pain, local autisepsis and natural drainage. It thus became obvious that in many cases operative and palliative measures were properly com-Having related some cases and analyzed Merz's statistics, the author arrived at the following

conclusions:

(1) Complete or incomplete tears of the lateral or posterior walls of the lower segment, with adequate provision for vaginal drainage, with hemorrhage absent Such cases or easy of control, no intestinal hernia. will often do well under simple palliative measures. (2) Complete tears of the lower segment, or moderate tears of the uterine body, with easy control of hemorrhage, child partially escaped. Peritoneal irrigation, with weak antisepsis or sterilized salt solution, drainage with iodoform wicking or gauze, with general palliative measures, would seem the most appropriate treatment. (3) Cases in which extraction of the child through the pelvis is impossible or inexpedient, in which there is hemorrhage uncontrollable by the vagina, in which the rent in the uterus is extensive, irregular, or transverse. In such cases abdominal section is indicated, the propriety of suturing the uterus to be decided according to the condition of this organ and the edges of the tear. Hysterectomy promises better results than suture where the edges are ragged, the uterus soft and septic.

PALLIATIVE TREATMENT OF RUPTURE OF THE HTERUS.

DR. MALCOLM McLEAN, of New York, read this paper. He thought there was too much tendency on the part of some to resort to operative interference whenever there was the least excuse for it; often when palliative treatment would be more in the interests of the patient. This tendency applied to some extent, it would seem, in cases of rupture of the uterus. Dr. McLean related a case managed successfully without opening the abdomen, and thought it would serve as a type of the class of cases in which palliative treatment When he was called the was highly appropriate. pains had ceased entirely; he found the child had by Polk, or to leave the cervix, after the manner of nearly escaped into the peritoneal cavity, pushing the membranes before it; and it was this fact, the presence of the membranes in advance of the child, which shut off all infection of the peritoneum. He extracted the child, pulling it back through the wound in the uterus; the membranes were removed; and the patient made a good recovery. A year and a half later she bore another child, which weighed nine pounds and a half. The scar of the previous rupture was felt.

There was a distinct field, Dr. McLean said, for DR. CHARLES M. GREEN, of Bostou, opened the operative treatment as well as for palliative treatment, and it was a mistake to wed one's self to either.

Dr. Lusk had heard Porro's operation mentioned in connection with these cases; but the nature of the tear, he said, excluded it. He would think seriously in another case of tying the uterine arteries and doing

hysterectomy.

Dr. REYNOLDS, of Boston, had seen four cases of rupture of the uterus, the first two patients dying. In the last two, seen in private practice, profiting by his experience with the others, the women were saved by palliative treatment. The future experience of these women was against the statement of Dr. Lusk, that rupture of the uterus without hysterectomy generally left the patient a permanent invalid. His patients recovered entirely.

Further remarks were made by Drs. Davis, Polk, R. A. MURRAY, and Cushing. They seemed to have less confidence in hysterectomy than had been expressed by the President.

Dr. W. GILL WYLIE, of New York, read a paper

THE INFLUENCE OF LACERATION OF THE PERINEUM ON THE UTERUS, AND THE OPERATION FOR ITS REPAIR.

He had found that medical students knew very little at examination with regard to the influence of perineal tears upon the position of the uterus and the mechanism of intra-abdominal pressure. The abdominal muscles and diaphragm, maintained by their contraction, press in the abdominal contents. When the uterus was in its natural position, pressure was exerted upon it through its long axis, and tended much less toward displacement and prolapsus than when it was retroversed and presented a broad surface to the organs The rectum joined the anus at about a right angle, which shut off expulsion of the feces through pressure above until the sphincter relaxed. juries to the perineum the anterior support to the rectal wall was weakened or destroyed. Straining at stool tended to force the rectum into the vagina, forming a rectocele. To repair the perineum successfully it was necessary to reunite the tissues in front of the rectum, tilting the rectocele backward, bringing the depressed sulci or angles on either side up over the rectocele. If the area which Dr. Wylie denuded in his operation were divided into an upper and lower segment by a horizontal line, the lower (extending below the origiual line of the hymen) would represent nearly half a circle, the upper a triangle. The centre was not left undenuded, as in Emmett's operation, he said; for to do so would leave a weak point just where it was desired to give reinforcement against the rectocele. Not more than four sutures were passed through the lower segment, and about the same number through the upper, preferably silver wire. It was necessary also to treat the rectum.

The paper was discussed by DRS. NOBLE and SKENE.

THE ULTIMATE RESULTS OF THE TREATMENT OF RETRO-DISPLACEMENTS BY PESSARIES.

DR. FRANCIS H. DAVENPORT, of Boston, read a paper on this subject. The conclusions reached were: (1) In cases of uncomplicated retroversion or retroflexion, the choice of treatment lies between pessaries and shortening the round ligaments; (2) a cure or symptomatic cure may be expected in about twentyfive per cent. of the cases treated by pessaries; (3) was very important to give attention in this direction.

where cure is effected, it is usually within a year or a year and a half after beginning treatment; (4) a large proportion of patients not cured can wear a pessary without discomfort, and do not wish an operation; (5) the Alexander operation should be limited to those cases where a pessary canuot be worn, to patients preferring it to wearing a support, and to cases in which the operation is supplementary to other precedures.

Dr. Cushing, of Boston, thought statistics upon results of treatment of backward displacements of the uterus by pessaries about as valueless as those upon dropsy. The Alexander operation, he said, had been practised much more in Boston about a year ago than at present; and it was his opinion that the field for its use was more limited than some had seemed to

Dr. CLEMENT CLEVELAND, of New York, had been able to cure fully seventy-five per cent. of cases of

retroversion where the pessary had failed.

Dr. Edebohls, of the same city, preferred in all cases to do the Alexander operation where the choice lay between it and the use of pessaries, but gave his patients choice between almost positive cure by this method and likelihood of failure by pessary in the hands of some brother practitioner.

Dr. Gehrung thought failures by pessary were sometimes apparent only, the cure having really been complete, but relapse taking place simply because of

allowing the original cause to continue.

Dr. Dickinson, of Brooklyn, spoke in the same line, emphasizing the necessity, if one would effect a permanent cure by pessary, of correcting faulty dress, faulty position at sewing and other occupations, and of encouraging muscular and general bodily tone.

Dr. M. D. Mann, of Buffalo, read a paper, treating of

INFLAMMATION OF THE URETERS FROM A MEDICAL STANDPOINT

His knowledge of the subject dated from 1888, when Howard Kelly taught him to palpate the ureters. Ureteritis was common and of great importance, yet is was scarcely mentioned in recent text-books. The causes were injuries during childbirth, extension upward of disease in the bladder, extension downward of disease in the kidneys, pressure by tumors, tuberculosis, abnormal conditions of the urine. The most common cause was abnormal condition of the urine, which, too, was often present when other causes might be acting, as gonorrheal inflammation, etc. The urine was apt to be scant, containing numerous crystals, but frequently of low specific gravity, commonly of high It should always be carefully examined acidity. chemically and microscopically. The renal insufficiency seemed often of reflex origin, not infrequently accompanying gastric disturbance and the so-called lithemic state. Some foods seemed to cause the urine to take on irritating qualities.

The pathological changes had been less studied by Dr. Mann; but thickening of the ureters was not infrequent, and one of the sources of irritation and vesical tenesmus lay in granulation about the mouths of the ureters. Both ureters were usually involved, but the left more seriously as a rule than the right. One of the most prominent symptoms was frequent micturition, especially during the day. The treatment varied with the cause, but where the urine was irritating it Render acid urine alkaline, increase the quantity, start with diaphoresis. Some of the balsams might prove useful taken internally. Catheterization of the ureters was easy by Kelly's method, but he had not seen much benefit from surgical measures. Granulations at the mouths of the ureters could be treated locally.

SYMPHYSEOTOMY VERSUS THE INDUCTION OF PRE-MATURE LABOR.

DR. CHARLES P. NOBLE, of Philadelphia, read this paper in reply to the question which he propounded. Is embryotomy upon the living child, deliberately selected, a justifiable operation? He said, No. In contracted pelvis in which delivery by forceps or version would prove so dangerous as to threaten mother and child, symphyseotomy ought to be selected. Further — and it was to this question the author directed special attention — in contractions of moderate degree it was better not to induce premature labor, but to let pregnancy go to term and do symphyseotomy. It was true that statistics gave a morality of five per cent. for the mother in premature labor, ten per cent. in symphyseotomy; but the author believed both of these were entirely too high in the hands of We had not alone to an expert at the present day. look to the interests of the mother; and since at present symphyseotomy as a selected procedure should be attended with very little danger, it should be resorted to instead of premature labor in the interests of the child, which by the latter method stood very little chance of being born alive or of surviving long after-

After some discussion upon the last two papers, the Society adjourned, to meet in executive session. Dr. M. D. Mann, of Buffalo, was elected President, Dr. Coe, Secretary.

Recent Literature.

Clinical Manual for the Study of Diseases of the Throat. By James Walker Downie, M.B., Dispensary Surgeon for Diseases of the Throat and Nose, Western Infirmary, Glasgow. New York: MacMillan & Co. 1894.

This is a small manual of two hundred and sixty pages. A book of this size is often useful both to the student and to the practitioner. The arrangement is good, and the descriptions in most cases clear and concise. The nose is not taken up at all, and there is very little on anatomy; for which reasons the book cannot be considered as a self-sufficient text-book for a course in laryngology; but for a brief description of the diseases of the fauces, pharynx and larynx and their treatment, it will be found useful and convenient.

Where to Send Patients Abroad for Water Cures and Climatic Treatment. By Dr. Thomas Linn, Physician at Aix-les-Bains, at Nice, etc. London: Henry Kimpton and Hirschfeld Brothers. Detroit: George S. Davis. 1894.

This treatise, of seventy-five pages, will be found of great assistance to physicians, who are sometimes consulted by patients whom they wish to send to Europe for health or rest. The first third of the book is devoted to general remarks on climatic treatment, and treatment at different resorts. The last two-thirds consists of an alphabetical list of maladies, with the resorts recommended for each.

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THE ANTITOXIN TREATMENT OF DIPH-THERIA.

It has been shown by the report of Dr. Thorne Thorne, the Medical Officer of the Local Government Board of London, that the mortality from diphtheria has increased gradually in England and Wales during the past twenty years, and that the increase has been more marked in the large towns. This increase has been much greater in London than in any of the other cities. For instance, during 1871 the death-rate per 1,000 of the living was .10, while in 1890 it was .33, or about three times as great. There has been relatively as great an increase in the mortality in this city.

As insanitary conditions have a very slight, if any, influence on the prevalence of diphtheria, this increase in its frequency can be explained by infection from unrecognized cases of the disease, and also by insufficient methods of isolation. The length of time that a patient should be isolated can only be determined by a bacteriological examination. Since diphtheria is manifestly on the increase, anything that can diminish its frequency or decrease the mortality demands the careful consideration of the medical profession. From the accounts in the Continental medical journals it would seem that the use of antitoxin, while it may not accomplish all that is claimed for it, yet the employment of this agent seems likely to do much not only in the way of decreasing the mortality but also in diminishing the frequency of the disease.

In the *British Medical Journal* of August 25, 1894, is a report by Thomas Eastes, M.D., F.R.C.S., of Folkestone, of seven cases treated by antitoxin. These cases all recovered.

The report of Dr. O. Katz regarding the employment of antitoxin in the Emperor and Empress Frederick's Children's Hospital at Berlin, is a valuable contribution. For the three years in this hospital, from 1891 to 1893 inclusive, there were 1,081 cases

treated, with a mortality of 38.9 per cent. From the commencement of the present year to March 14th, there were 86 cases treated, with a mortality of 41.8 per cent. Since the middle of March 128 cases have been treated by antitoxin in this hospital, and the mortality has fallen to 13.2 per cent. In his report Dr. Katz says that in no instance could any deleterious effect be attributed to this agent. Regarding the prophylactic properties of antitoxin, Dr. Katz says that he inoculated 72 children exposed to the disease, and only 8 contracted it, and they had extremely mild attacks.

In the Moabit Hospital in Berlin, from December 1, 1893, to the 22d of March, 1894, 44 cases of diphtheria were treated by the injection of antitoxin. Of these, 11 died, and 33 recovered, or 75 per cent. Tracheotomy was performed 13 times, with 9 recoveries. Among the number of those who died there were four children who were moribund when admitted, and who died in less than twelve hours after entrance. One child died of septicemia a short time after admission. Streptococci were found in the blood. Five of the children died, not from diphtheria, but from some of the sequelæ; one from inflammation of the internal ear, and four, either from inflammation of some of the internal organs or from heart failure. In only five of the seven children who died was there any prospect of a beneficial result from any course of treatment. The urine of the children was tested for albumin before and after the injection. This investigation showed that the injections did not cause albuminuria. On the other hand, from July 1, to December 1, 1893, when antitoxin was not used, 66 cases of diphtheria were treated by the usual methods, and 20 died, and 46 (or 70 per cent.) recovered. Tracheotomy was performed 35 times.

Another point of interest is the fact that out of 44 cases treated with antitoxin, tracheotomy was required in 13 instances; while of 66 cases treated by the usual methods, tracheotomy was performed 35 times. The severity of diphtheria varies so much in different epidemics of the disease that it is impossible to decide positively for or against any special mode of treatment until a large number of cases has been observed extending through a series of epidemics. This much, however, can be said regarding the cases at the Mosbit Hospital; that the number of cases of tracheotomy was diminished in a marked degree, and also that the death-rate was diminished to a considerable extent when antitoxin was used.

At the Medical Congress at Budapest, M. Roux read a very exhaustive paper upon the use of antitoxin in the treatment of diphtheria, an abstract of which will be given in our next issue. After describing the preparation of antitoxin and the immunization of animals, he gives a very full account of its use in children ill with diphtheria. He says that in the children's hospital, in Paris, during the years 1890, 1891, 1892 and 1893 there were 3,971 children treated for diph-

of deaths was as follows: in 1890, 55.88; in 1891, 52.45; 1892, 47.64; in 1893, 48.47, with an average of 51.71. From the 1st of February to the 24th of July, 1894, when the treatment by serum was used, there were 448 cases treated and 109 deaths, or a percentage of 24.5. As the conditions were practically the same, the difference between a death-rate of 51.71 per cent. as compared with 24.5 per cent. would seem to indicate that antitoxin is an efficient remedial agent. It should be said, however, that the epidemic during which this agent was used was not by any means a mild one. M. Roux states that the general condition of the children treated by antitoxin was very much improved unless they were very far advanced in the disease when treatment was commenced. The complications which attend diphtheria were also comparatively rare when the serum was used. The effect of antitoxin upon the local lesions of diphtheria was very marked. The false membrane did not extend in the twenty-four hours which followed the first injection. It became detached generally after thirty-six to fortyeight hours, although in some instances it remained until the third day. In only seven cases did it remain for any very great length of time. The action of antitoxine caused a rapid fall in the temperature; and if the defervescence was marked after the first injection, the prognosis was favorable.

MM. Martin and Challon have found that of 120 children treated by antitoxin 54 did not have albuminuria; 12 had this symptom only one day, and 54 had albuminuria during the whole course of the disease.

It therefore seems evident that the use of serum diminished the action of the diphtheritic poison on the kidneys, and therefore diminished considerably the frequency of albuminuria.

M. Roux also states that the number of cases requiring tracheotomy was very considerably diminished.

The report of the cases of diphtheria treated at the Emperor and Empress Frederick's Hospital at Berlin, is much more conclusive in favor of the beneficial. effects of antitoxin. It has already been said that the death-rate under the use of this agent fell to 13 per cent., as compared with 48 per cent. when it was not used. The cases reported by Dr. Eastes are of interest, but they are so few that no deductions can be drawn from them. In spite of what medical sceptics may say, there seems to be abundant proof that antitoxin, while it may not accomplish all that has been claimed for it, is an extremely valuable agent in the treatment of diphtheria, and is well worth a conscientious trial by the profession.

The action of the New York Board of Health in making a satisfactory trial of this agent possible is to be commended.

A few words should be said regarding the manner of using antitoxin. In order to arrive at any satisfactory conclusions, it is all important that in every instance where antitoxin is used there should be a bacteriological examination of the throat. It is also imtheria, and there were 2,029 deaths. The percentage portant that the urine of the patient should be examined for albumin before and after the injection. The dose for procuring immunity, according to some observers, is one cubic centimetre for any age over three years, and half that for younger children. For a cure of the disease during the first two or three days under two years of age, two to three cubic centimetres; from two to ten years, five cubic centimetres; over ten years of age After the third day in a severe ten cubic centimetres. case, twice as much may be used with positive advantage. If the disease does not seem to be ameliorated by the first dose a second should be given in twelve hours. In the account of the cases treated there is no evidence of any distressing or annoying symptoms caused by the One advantage of this treatment is, that after the injection into the back or abdomen, there is no interference with the patient; no swabbing of the throat; no tearing of the mucous membrane. It is stated that even in the worst cases that proceed to a fatal end, there is a marked amelioration in the suffering; that the dyspnea is relieved to a certain extent. If the patient dies, his death is comparatively painless. Other observers advise relatively larger doses than have just been indicated. The question of dosage is one that can only be decided by a more extended use of this agent. In regard to the kind of syringe that should be used, it must be said that the common subcutaneous syringe is not adapted for the purpose, because it cannot be properly sterilized by heat. Koch's syringe, which consists of a detachable rubber bulb, a glass barrel and a needle is the most satisfactory instrument for this purpose. The barrel and steel needle can be put in a test-tube in the bottom of which a little cotton is placed, the tube plugged with cotton, and then put in the oven of a cooking-stove and kept at a temperature of 150° C. for half an hour or more, or until the cotton is slightly singed. A syringe prepared in this way will remain sterile for four or five days.

It is earnestly to be hoped that antitoxin, in view of the published reports of cases abroad, may receive a fair and impartial trial in this locality. Until it has received such a trial the whole subject must remain sub judice.

BARON MUNDY AND THE VIENNA AMBU-LANCE SOCIETY.

VISITORS to Vienna within recent years have noticed the importance of the *Freiwillige Rettungs-Gesellschaft* and the estimation in which it is held by the people. This society was established on the day following the burning of the Vienna Ring Theatre, in which several hundred people lost their lives; and it has filled such an important position that societies of the same kind have since been established in most of the Continental cities and large towns. The founder of this society and its patron for more than ten years was Baron Jaromir Mundy, whose recent suicide on the banks of the Danube canal has attracted an unusual amount of attention and sorrow in Vienna.

He was born in Moravia in the year 1822, and until thirty-three years of age served in an infantry regiment. He then studied medicine, and after graduation spent a few years in the study of insanity. In the war with Italy he served as a volunteer on the medical staff through the whole campaign; again, in the Austrian-Prussian war of 1866, he joined the medical department and distinguished himself by the practical organization of aid for the wounded; he rendered valuable service in the Franco-German war and during the Commune; he also organized an ambulance service in the war between Servia and Turkey and in the Russian-Turkish war of 1877.

The history of the Volunteer Ambulance Society in Vienna is a practical proof of his energy and ability. Previously the care of emergencies in the city was as poor as it could possibly be. Baron Mundy established a large number of ambulances in convenient parts of the city, and a system by which medical help and careful attention in removing the wounded could be summoned in a very short time to any locality. The ambulances were mostly propelled by man power, and will be remembered by all who have lived in Vienna since their introduction. By the efforts of the society different apparatus for use in case of emergency was established along the canals and in the theatres, and instructions for public guidance were posted and circulated. Street accidents, cases of sudden sickness and other emergencies were promptly and ably looked

Baron Mundy was the author of several well-known medico-military and other writings, in all of which he invariably condemned the act of suicide, which among Austrians is of remarkably frequent occurrence. It is therefore a source of more than usual surprise that he should now take his own life. The regret felt in Vienna at his death is general and sincere.

MEDICAL NOTES.

THE PLAGUE. — The devastation of the plague in China has come to an end, and the port of Hong Kong has been declared officially free from the disease.

LEPROSY IN PRUSSIA. — A number of lepers have been discovered in Eastern Prussia, especially at Konigsberg and at Memel, about seventy miles from Konigsberg. In this latter district alone ten genuine cases of leprosy have been found and the disease has been officially declared to exist in these districts.

SAD DEATH OF A PHYSICIAN. — The body of Dr. William B. Seymour, of Tiffin, Ohio, who disappeared from New Market, Va., last June, has been found in the mountains four miles from New Market with both arms broken. The indications are that the old mau, who was in his eighty-fifth year, had fallen over a ledge and afterward starved to death.

ANIMAL EXTRACTS RIDICULED. — An apt humorous letter appeared recently in the American Practitioner and News, ridiculing the animal extracts so

widely advertised in the daily press. The writer of the letter details his experimental attempts to grow new parts upon mutilated dogs, using for the purpose extracts from the ears, tails, legs, noses, etc., of other dogs, under the names "earine," "tailine," "legine," "nosine," and the like. By an unfortunate mixing up of the extracts he grew legs and tails of entirely different breeds from the rest of the dog with most confounding and embarrassing results, and he warns future experimenters in this line to beware of his mistakes, or they may find some day that they have caused the flat nose of a full-blooded negro to grow upon some blonde young lady, who might cause them to be mulcted in enormous damages in consequence of so disastrous a blunder.

IMMORAL MASSAGE. — Concerning the extent of this evil in the city of Chicago, the Journal of the American Medical Association says that, possibly moved thereto by the unwelcome notoriety given to its "massage parlors," the city has begun what the newspapers call "a crusade" against these dens of vice. An investigation has been commenced by the police, and the licenses of nine of the most notorious have already been recommended for revocation. They are characterized in the report of the investigation as "little if any better than the lowest 'dives' in the city." The term "massage" had come to be so closely identified with the practices of these "parlors" that physicians were growing shy of recommending the treatment.

MASSAGE LIMITED. — The London Financial News has found a prospectus from which it quotes extracts and which it proceeds to show up as a warning to in-The company is called the cautious speculators. American and Parisian Massage Company. The public is asked to subscribe fifty thousand dollars to provide suitable premises at various important centres for the proper and scientific carrying out of the science and art of massage and medical electricity. The company intends to open first-class establishments at fashionable resorts, fitted throughout in the best style, and promises enormous dividends to its stockholders. The prospectus goes on to say that the art of massage was known and practised in Egypt at least forty centuries ago, and is the action of pressing with the hands all the muscular parts of the body, pulling upon and exercising the joints in order to give them suppleness, and an excited vitality in the skin and adjacent tissues. Exactly why it should be called the American and Parisian Company is not very evident, considering that abnormal forms of massage flourish more luxuriantly in London than anywhere else. The News, nevertheless, takes occasion to say some very uncomplimentary things about American ways of doing things, and even goes so far as to call this "ultra-American."

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the week ending at noon, September 19, 1894, there ing the matter in charge, a number of them necessawere reported to the Board of Health, of Boston, the rily brought suit for the time and labor expended.

following numbers of cases of acute infectious disease: diphtheria 56, scarlet fever 30, measles 9, typhoid fever 46.

AN EPIDEMIC OF TYPHOID FEVER AT MARLBORO', MASS. — An epidemic of typhoid fever exists in Marlboro', Mass., due, it is believed, to an infected milk supply. There have been forty-six cases of the disease since September 1st.

NEW YORK.

TENEMENT-HOUSE POPULATION. — According to the report just made by Dr. Roger Tracy to the Board of Health, the tenement-house population of New York now amounts to 1,332,772. This, however, includes the population of all the cheaper grade of apartment-houses.

CONSTITUTIONAL CONVENTION AND THE OFFICE OF CORONER. — On September 11th, the Constitutional Convention which has been in session all summer at the Capitol in Albany, reached final passage of propositions previously discussed, and the first to be passed was the one abolishing the office of coroner as a constitutional office. The vote of the delegates was 97 to 43, and this question, with the other proposed amendments to the Constitution, will be submitted to the people of the State.

HEALTH OF NEW YORK. - The record of the past summer has been an unusually favorable one as regards the general health of the city. Even in the hot weeks of June and July the mortality was not excessive, and the cool weather of August has materially reduced the average of deaths. During the week ending September 1st, the number of deaths reported was 726 as against 759 for the corresponding week last year, when the estimated population was 60,000 less than now. It was also 40 less than the mortality of the preceding week, and 69 below the average of the corresponding week for the past five years. The annual death-rate per thousand of the city's population represented by the week is 19.24; which is 1.37 less than that of the preceding week, and 1.83 less than that of the average of the corresponding weeks of the past five years. The number of births reported during the week was 1,104.

UNVEILING OF THE SIMS STATUE. — On November 13th, the anniversary of the death of the great surgeon, it is proposed to unveil the statue of the late Dr. J. Marion Sims. It will be placed on the north side of Bryant Square, where the dark granite pedestal has already been completed. Soon after Dr. Sims's death, in 1883, the movement for the erection of a bronze statue was set on foot, and the necessary funds were principally subscribed by members of the medical profession. The long delay that has elapsed has been principally due to litigation on the part of certain artists. American sculptors were at first asked to compete in a design for the work, and when all the designs submitted were rejected by the committee having the matter in charge, a number of them necessarily brought suit for the time and labor expended.

All the suits were finally dismissed, and the commission for the statue was given to Müller, of Munich. A number of months ago it arrived in this country, and it is said to be a very satisfactory work of art.

Assault on Ambulance Surgeon.—Dr. Thomas Garvey, of the Harlem Hospital, had a very uncomfortable experience the other day while taking a patient to the hospital in an ambulance. The patient was a half-intoxicated man who had fallen from the platform to the track at one of the elevated railroad stations and dislocated his shoulder. Shortly before the ambulance reached the hospital he suddenly drew a revolver and fired at the surgeon, wounding him in the shoulder. He was on the point of firing again when Dr. Garvey threw himself forward upon him and disarmed him, at the same time shouting for assistance. A number of men at once gathered about the ambulance, and the desperate fellow was tied to a stretcher. At the hospital his dislocation was reduced, and he was then removed to a station-house. nately, Dr. Garvey's wound proved to be slight.

Miscellanp.

CARLYLE AND THE MEDICAL PRIESTHOOD.

ONE of the most interesting features of the excursion to Tintern Abbey at the annual meeting of the British Medical Association at Bristol was the reading by Dr. Yeats of a letter from Thomas Carlyle, which he said had never before been published.1 It was addressed to the author of a book entitled "The Healing Art the Right Hand of the Church," by "Therapeutes" (Sutherland and Knox, Edinburgh, 1859). Dr. Yeats stated that "Therapeutes" is still living. The following is the text of the letter:

CHELSEA, February 25, 1859. DEAR SIR, - I have received your book which you were kind enough to send me, and I beg to return you thanks for the same. It is a book (unlike many that come to me here) of a serious nature, the fruit of long study, meditation, inquiry, and evidently of perfect conviction on your part.

I believe, and have long believed, the essential idea it sets forth to be not only true, but of the very highest importance to mankind, namely, that the Physician must first of all be a Priest (that is to say, a man of pious nobleness, devoted to the service of the Highest, and prepared to endure and endeavour for that same, taking no counsel of flesh and blood, as the theory of Priests is)—first of all, a real Priest, and then that the whole world should take supreme counsel of him, as it does of its real or imaginary priests or pontiffs this long while back, and follow said counsel as the actual will of God, which it would be were the physician what I say.

It is curious to remark that Heilig in our old Teutonic speech is both holy and also healthy; that the words holy and healthy, as our antique fathers understood them, are one and the same. A thousand times has that etymology risen sorrowfully upon me in looking at the present distracted position of affairs, which is horrible to think of, if we look earnestly into it, and which cannot well be spoken of at all. We, sure enough, have completely contrived to divorce holiness (as we call it) from health, and have been reaping the fruits very plentifully during these fifteen hundred years.

The notion of bringing our present distracted anomaly of

¹ British Medical Journal, September 8, 1894.

a Physician into union with our ditto ditto of a Priest, and making them identical is, of course, extremely chimerical; nor can one easily say what ought to be the first step towards bringing each of them back from his anomalous, imaginary condition, and nearer to veracity and the possibility of coalescing. But I am very glad to see the idea started, in any form, under any vesture, and heartily wish you success in bringing it home to men's minds. — I remain,
Yours truly,
To "Therapeutes," Messrs. Sutherland and Knox,

Booksellers, Edinburgh.

THERAPEUTIC NOTE.

THE TREATMENT OF TAPE-WORM. - Dr. Leslie Ogilvie, attributes the frequent failures in the attempt to remove a tape-worm to a lack of attention to details in the administration of the drug used. When the purgative is given soon after the anthelmintic the worm is carried away all but the head. In such cases it is useless to repeat the drug, as is frequently done, in a short time, as the worm offers but scanty absorbing surface and the chief effect of the drug is to poison the patient. Neither does he consider castor oil a suitable purgative to give before the administration of the anthelmintic as there is in all probability a considerable coating of mucous about the worm which the oil does not remove. Sulphate of magnesia with tincture of jalap he considers the most efficacious preliminary purgative. He conducts his case as follows and reports thirteen consecutive cases successfully treated, ten of which had been previously treated without result. The patient should eat less than usual for a few days before treatment, and the day before should be restricted to a milk diet with a little stimulant. At bedtime a purgative draught of sulphate of magnesia and tincture of jalap is given, and repeated at seven the next morning if the first dose has not operated. At eight A. M. a drachm of fluid extract of male fern is given, and at nine o'clock a second dose. At eleven o'clock a dose of castor oil is administered; even if the worm has been passed previously, it is well to give the oil to remove any of the poison which may be left. The physician should pay a visit soon after the second dose of male fern has been given, not only to observe the patient, but to inspect all the motions, each one of which should be passed into a separate utensil. In searching for the head it is convenient and less unpleasant to use a dilute solution of permanganate of potash as a disinfectant with which to separate the worm from the feces.

Correspondence.

LETTER FROM BERLIN.

Berlin, August 25, 1894.

MR. EDITOR: — To those of your readers who formerly were students at the Berlin gynecological clinics it may be of interest to hear from one now there.

At this season Berlin is deserted by the regular university student, and the scarred face and small cap are only occasionally seen at the Charité or Café-Restaurants. Many Americans, however, are seen presenting their cards at the semi-private clinics for the purpose of witnessing a few operations by the better known men here. I understand a considerable quota of freshly graduated men, chiefly from the Western States, spend considerable time in Berlin, whereas, formerly, this city was favored by medical men

¹ Lancet, August 4, 1894.



with only a brief stay on their way to the Medical Mecca at Vienna. The opportunities for study here have certainly increased to a large extent in the last decade, but the student from the Eastern States has learned that a complete medical education can also be obtained at home.

Most of the university men have just gone on their vacation to England or the German Springs; but one coming here in July and early August had a good opportunity to see Olshausen, Martin, Bergmann, Gusserow. Winter, Landau and others. For beautiful work, a superb technique, and in general a good illustration of modern surgery applied according to well-defined laws, the general surgical clinic of Professor Bergmann, in Liegel Strasse, and the gynecological clinics of Professors Olshausen and Winter, in Artillerie Strasse, stand preëminently in the foreground of anything one sees here.

You would be reminded very strongly of the days of Shroeder, whose bust stands in the beautiful University Department for Frauenkrankheiten, by the set of rules for asepsis with which you must comply before being granted admission to the clinic. Professor Winter, who is still a young man and very popular, requires a personal introduction, after which, a generous trinkgeld to the porter brings to your lodging, the evening previous, information of the operation on the following morning. On the whole, one is quite welcome, especially in vacation days, to the various clinics.

Of the prominent men one sees in Berlin at present, Professor Gusserow is the slowest but most conservative, one who accomplishes much with few mistakes in a very deliberate fashion; Olshausen, Winter and Bergmann are the neatest, most particular and most enjoyable men to see and hear; while Martin towers head and shoulders over everybody in the rapidity of his work.

Any disciple of Æsculapius, who is likely to be over-indulgent in festivities the night before, would do well to celebrate in the neighborhood of the clinics, since most of the men operate at an early hour in the morning — Bergmann at 9, Winter at 7 or 7.30, and Martin at 6.30 and 7.4. M.

To one who has not seen Tait, it is really astonishing to witness the celerity with which Professor Martin does a complete hysterectomy. In the three weeks I spent with him I never saw an operation of this magnitude last more than forty-three minutes, while a double, but rather simple case of pyosalpinx was completed from first incision to the last suture in the abdominal wound in six minutes. Frau Horn still acts as his first assistant, and has charge of instruments, sponges, needles and sutures, and a general oversight of detail work; while the so-called first assistant, sitting, holds back the intestines by means of a sponge and the palm of his extended hand. Everything moves with precision and speed. With a bold, generous incision the peritoneum is reached and at once incised between the finger-tips. No hemostatic measure is applied to the abdominal wound. The tumor or diseased organ is quickly freed from its bed and adhesions, and a pedicle rapidly sewed off with curved needle, without clamps, by means of stout catgut. The stumps, bruised peritoneum and pelvis generally are dried by means of ordinary aseptic seasponges and lubricated with aseptic clive oil. A large flat sponge wet with oil is then laid over the replaced bowels and omentum, and the abdominal wound closed with deep silk sutures passing through all structures; the superfluous oil is squeezed out of the abdominal cavity. While the sutures are being taken, the assistant is tying, and a second case is being anesthetized in an adjoining room. Drainage is seldom used. He sits between the knees of his patient and sews with great deftness.

In his enucleation of the uterus, he first sews off the ovarian and uterine arteries near the fibromatous or cancerous uterus; then he dissects from the posterior surface, cutting and sewing as he goes, till at last the tumor hangs by a small narrow piece of the arterior part of the cervix. The catgut sutures are turned into the vagina, and the thin reflected peritoneum sewed over them to shut off the peritoneal cavity.

His plastic operations of the vagina are beautiful. For cases of severe endometritis, besides curetting and the injection of carbolized iodine or iron, the cervix is slit laterally and packed with a thin piece of cotton wet with oil.

Professor Martin is justly noted for his work; but one would hardly visit his large private hospital for neatness' sake. While everything is aseptic to the last degree, yet one must be a good swimmer or carry a life-preserver if he would come away in safety. His cardinal principles seem to be asepsis, celerity, thorough sewing off of all sources of leakage, neglect of abdominal wound and lubrication of the parts handled. His success seems to be in keeping with his brilliant work.

Of the following cases operated on during my first day here, all were ready to leave the hospital by the twentyfirst day, and most of them on the fourteenth day:

	Double pyosalpinx, tubes size of wrist						13 min.
	Cystoma, ovarian, multilocular .						19 min.
	Cyst of meso-colon						17 min.
	Three months' extra-uterine fetation						14 min.
	Simple pyosalpingitis, both tubes .						6 min.
١	Hysterectomy, fibroma						43 min.
	Hysterectomy, carcinoma						30 min.
	Salpingo-cophoritis - resection of tul			ture	of	cysts,	
	and formation of new distal end of	tu	be			•	23 min.

This day's work commenced at 7, and was finished about 10.15. Yours truly, G. RYDER, M.D.

HYDROPHOBIA STATISTICS DESIRED.

4101 WALNUT ST., PHILADELPHIA.

MR. EDITOR: Will you, through your columns, ask that my professional brethren will communicate to me the occurrence of so-called hydrophobia in their practice for the year 1894, from January 1st, and so on until the end of this year?

I would like in all cases to learn: (1) the sex and age of patient; (2a) the kind of animal that is credited with the inoculation; (2b) its state of health; (2c) the provocation to bite (if any existed); (2d) the reasons why the animal was (if it was) deemed rabid; (3) the seat of the bite (or other mode of inoculation); (4) the fact and method of cauterization (if any); (5) the time between the inoculation and the outbreak; (6) the symptoms of the outbreak (the occurrence of mania or imitation of dog actions); (7) the remedies used and doses, with their seeming effect; (8) the issue of the case and when death occurred; (9) the investigations made to exclude the presence of disease other than so-called hydrophobia; (10) the findings on autopsy (if one was held).

I shall, of course, acknowledge in future publications, aid received in continuing my studies in regard to this subject.
Yours respectfully, Charles W. Dulles, M.D.

METEOROLOGICAL RECORD,

For the week ending September 8th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

	Baro- meter	Thermon- eter.		Relative humidity.					Velocity of wind.		We'th'r.		in inches.	
Date.	Daily mean.	Daily mean.	Maximum.	Mihimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	R.00 A. M.	8.00 P. M.	Rainfall in in
S 2 M 3 T 4 W 5 T 6 F 7 S 8	30,33 30,19 30,04 30,10 30,09	72 60 66 75 72 72 64	81 62 78 84 78 83 68	63 58 55 66 66 60 60	51 51 72 82 75 68 83	64 65 86 76 46 77 94	79 79	N.E. S.W.	N.E. S.W. S.W. N.E. 8.	12 13 9 12 7 9 7	5 15 11 6 8 3	C. O. O. O. S. O.	S. O. O. O. O.	.09
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*O., cloudy: C., clear; F., fair; G., fog; H., hazy; S., amoky; R., rain; T., threat-caing; N., anow. † Indicates trace of rainfall.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, SEPTEMBER 8, 1894.

	ġ	the	. 5	Percentage of deaths from						
Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Infectious diseases.	Consump- tion.	Diarrhosal diseases.	Typhoid fever.	Diphtheria and croup.		
New York	1,956,000	710	335	24.50	10.78	14.56	2.80	4.62		
Uhicago	1,438,000	i -	-	_	-	i —	i —	_		
Philadelphia .	1,139,457	396	162	22.00	12.75	12.25	1.75	6.50		
Brooklyn	1,013,000	404	188	27.50	12.50	16.75	.20	6.50		
St. Louis	540,800	_	-	_	-	-	_	_		
Boston	501,107	216	101	22.54	15.18	10.68	.92	6.44		
Baltimore	500,000		-	_	-	_	-	_		
Washington .	2:5,000	_	-	_	_	-	-	_		
Cincinnati	325,000	_		_	_	-	_	_		
Cleveland	325,000	-	-	-	-			-		
Pittsburg	272,000	98	42	32.64	13.26	28.56	3.06	_		
Milwaukee	265.000	39	14	7.68	12.80	5.12	2.56	_		
Nashville	67,754	-	-	_	-		_	_		
Charleston	65,165	-	-	_	-	_	_	_		
Portland	40,000		-				2.04			
Worcester	100,410	49	30	28.56	4.08 2.70	22.44	2.04	_		
Fall River	92,233	37	19	21.60	2.70	21.60	-	3.70		
Lowell	90,613	27	16	40.70	-	11.10	_	3.70		
Cambridge	79,607	-	-	_	_	_	_			
Lynn	65,123		-	=		10 74	5.26	_		
Springfield	50,284	19	6	15.78	5.26	10.52	0.20	_		
Lawrence	49,900		-	_	11.11	_	_	_		
New Bedford .	47,741	18	10	_	11-11	_	_			
Holyoke	43,348	_	-	_	-	_		_		
Brockton	33,939	-	_	_	_	_	16.66	_		
Salem	33,155	9	-	22.22	11.11	22.22		_		
Haverhill	32,925	6	3	16.66	16.66	22.22	18 68	_		
Malden	30,209	٥	3	10.00	10.00		10.00	_		
Chelsea	29,806 29,3±3	_		_	_	_				
Fitchburg	28,837	_	_	_	_			_		
Newton	27,293	_	_	_	_		_	_		
Gloucester Taunton	26,955	12	2 2	8.33	8.33			8.33		
Malaham	22,058	4	2	25.00	0.00	25.00		0.00		
Quincy	19,642	-	-	20.00	_	20.00	_	_		
Pittsfield	18,802) =		_	_			_		
Everett	16,585	3	1	_	=	_		_		
Northampton .	16,331	_		_	i	_		_		
Newburyport .	14,073	_		_	_	_	_			
Amesbury	10,920	3	2	33.33	_	33.33	1111111111	_		
Amosoutj	1 20,020	1		30,00		30.00				

Deaths reported 2,067: under five years of age 945; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 502, consumption 238, acute lung diseases 148, diarrheal diseases 306, diphtheria and croup 101, typhoid fever 45, whooping-cough 25, scarlet fever 11, measles 7, malarial fever 2, small-pox 1.

From whooping-cough Philadelphia and Brooklyn 6 each, Boston 5, New York and Pittsburgh 3 each, Fall River 2. From scarlet fever New York and Boston 4 each, Cambridge 3. From measles New York 4, Brooklyn 3. From malarial fever New York 2. From small-pox New York 1.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 8, 1894, TO SEPTEMBER 14, 1894.

MAJOR PETER J. A. CLEARY, surgeon, is relieved from duty at Fort McPherson, Ga., to take effect upon the expiration of his present leave of absence and ordered to Fort Brown, Texas, for duty, relieving CAPTAIN WM. B. DAVIS, assistant surgeon.

CAPTAIN DAVIS, upon being relieved by MAJOR CLEARY, will report for duty at Fort Brady, Michigan, relieving CAPTAIN PAUL CLENDENIN, assistant surgeon.

CAPTAIN CLENDENIN, upon being relieved by CAPTAIN DAVIS, will report for duty at Fort Warren, Mass.

DAVIS, will report for duty at Fort Warren, Mass.

So much of the ordinary leave granted FIRST-LIEUT. WILLIAM
F. LIPPITT, assistant surgeon, as is embraced in the period from
August 10 to September 25, 1834, is changed to leave of absence
on surgeon's certificate of disability.

MAJOE CHARLES SMART, surgeon, and CAPTAIN HARRY O.
PERLEY, assistant surgeon, are detailed as delegates to represent the Medical Department of the Army at the twenty-second
meeting of the American Public Health Association, to be held
at Montreal, Can., September 25 to 28, 1894.

Leave of absence for one month, to take effect after termination of present field duty at Raton, N. M., is granted MAJOE

tion of present field duty at Raton, N. M., is granted MAJOR JAMES P. KIMBALL, surgeon, U. S. A.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL OBSERVATION. - A regular meeting of the Society will be held at 19 Boylston Place on Monday evening, October 8th, at 8 P. M. Dr. F. L. Jack will read a paper entitled "Remarks on

Dr. F. L. Scale W. Stapedectomy."

Dr. W. C. Holyoke on "Some Cases of Scarlet Fever with Especial Reference to Contagion and Prophylaxis."

JAMES G. MUMFORD, M.D., Secretary.

TRI-STATE MEDICAL SOCIETY OF ALABAMA, GEORGIA AND TENNESSEE.—The sixth annual meeting will be held in Atlanta, Ga., October 9th, 10th and 11th. Members of the profession are all invited.

J. B. S. HOLMES, M.D., President, Atlanta, Ga. Frank Trester Smith, M.D., Sec'y, Chattanooga, Tenn.

NEW YORK STATE ASSOCIATION OF RAILWAY SURGEONS. New York State Association of Railway Surgeons.—
The fourth annual meeting of the New York State Association
of Railway Surgeons, will be held at the Academy of Medicine
in New York City, November 15, 1894, under the presidency of
Dr. M. Cavana, of Oneida, N. Y. A feature of this meeting
will be the election to honorary membership of a large number
of railway surgeons from New England. It is therefore desired
that as many surgeons as possible from this section attend the
meeting. meeting. Geo. Chaffee, Chairman Committee on Membership.

RECENT DEATHS.

A. B. MILES, M.D., Professor of Surgery in Tulane University, New Orleans, died August 5th, aged forty-one years.

PROFESSOR ROLLETT, Professor of Hygiene at Lyons, and a well-known syphilographer, died August 2d, aged sixty-nine years.

The death is announced of Dr. Joaquin Maldonado, Dean of the Medical Faculty of Bogotá and professor of gynecology for forty years in that University.

WILLIAM CECIL DABNEY, M.D., Professor of Obstetrics and the Practice of Medicine in the University of Virginia, died at Charlottesville, Va., August 20th, aged forty-five years.

LEVI W. CLAPP, M.D., of Pawtucket, R. I., died in that city September 18th, aged forty-five years. He graduated from Brown University in 1870, and from the Harvard Medical School in 1873.

NOAN SANBORN, M.D., died in Bayonne on September 6th, aged fifty-seven years. He served throughout the Civil War as a surgeon in the Northern Army, and at the time of his death was one of the attending staff of the Bayonne City Hospital.

Dr. Leon Warnots, Professor of Operative Surgery in the University of Brussels, died recently of septicemia following a dissection wound. Dr. Warnots was only thirty-eight years of age but was well known among his countrymen as an able and accomplished surgeon.

Beaven Neale Rake, M.D., Lond., L.R.C.P., M.R.C.S., the well-known leprologist, died at Port of Spain, Trinidad, on August 24th, aged thirty-six years. He was appointed by the Royal College of Physicians of London as their representative on the Leprosy Commission, in recognition of his work as superintendent of the Trinidad Leper Asylum.

BOOKS AND PAMPHLETS RECEIVED.

Ueber Hitze Sterilisation des Katgut. Von Prof. Dr. Max Schüller in Berlin. Reprint. 1894.

Sixteenth Annual Announcement of the St. Louis College of Physicians and Surgeons, Session 1894-95.

Announcement of the Gross Medical College, Denver, Colo., Annual Session, 1894-95. Reprint. 1894.

Eleventh Annual Announcement of the Medical and Dental Departments of the National University, 1894-95.

The Annual Report of the Department for the Insane of the Pennsylvania Hospital for the Year ending fourth month 25th,

Précis de Clinique Thérapeutique. Par le Dr. A. F. Pliaque, Médecin adjoint à la Compagnié du Nord, etc. Paris: G. Steinheil. 1894.

Transactions of the Association of American Physicians, Ninth Session, held at Washington, D. C., May 29, 30, 31 and June 1, 1894, Vol. IX.

Vade-Mecum du Praticien Diagnostic et Traitement des Maladies Internes. Par le Dr. Fernand Roux, Lauréat de la Société Médico-Pratique et de la Société de Médecine. Paris: G. Steinheil. 1894.

Bibliographie der Klinischen Helminthologie, Heft 7-8. Dracunculus Persarum Kämpfer Filaria Sanguinis Hominis Lewis und Trematoden. Von Medicinalrat, Dr. J. Ch. Huber. München: J. F. Lehmann. 1894.

Circumcision. Traumatic Periostitis. The Surgical Use of Cocaine. Obliteration of Congenital Pigmentations. Report of a Case of Carcinoma of Ileum; Intestinal Obstruction Relieved by Anastomosis with a Murphy Button. By B. M. Ricketts, Ph.B., M.D., of Cincinnati, O. Reprints. 1894. By B. Merrill

Original Articles.

THREE CASES OF CHRONIC BRIGHT'S DISEASE OF DIFFERENT TYPES.1

BY J. BERGEN OGDEN, M.D.,
Assistant in Chemistry, Harvard Medical School.

CASE I. J. G., who was forty-three years of age, a Nova Scotian by birth, was admitted to the service of Dr. A. L. Mason at the Boston City Hospital. He had followed the occupation of house-painting for the past twenty years. Two brothers who had also been associated with him in house-painting died of what was considered to be Bright's disease. The family history was otherwise negative. The only illness he could remember, aside from the usual diseases of childhood, was that of lead colic nine years ago.

The present illness dates back only three months before entrance to the hospital, at which time he noticed slight swelling of the feet and abdomen, followed in a few days by tinnitus aurium, which was constant and persistent. After the lapse of a day or two he had a convulsion. He remained in bed for about ten days and was fairly comfortable, but on getting around again, was troubled greatly by the severe headache and marked swelling of the feet. It was at this time that he first noticed an increase in the amount of urine passed.

About one week later, while walking on the street, he became dizzy, followed by a loss of consciousness. On regaining consciousness one-half hour later, he found himself at home, having been picked up and carried there by a friend.

Four days before entrance he had another convulsion; and it was about this time a slight puffiness of the face was noticed.

On entrance to the hospital he was found to be a well-developed and poorly nourished man, having a decidedly pasty appearance. The eyesight, he said, had been gradually failing in the past four months. No ophthalmoscopic examination was made. A distinct "blue line" was found on the gums. The odor of the breath was very offensive. The heart's area was found to be enlarged, and a very faint systolic murmur was heard over the mitral area and at the apex, transmitted only a short distance toward the axilla. The aortic second sound was slightly accentuated. There was considerable ædema of the extremities. The physical examination was otherwise negative.

The urine was normal, acid, specific gravity 1.014; indoxyl increased; urophæin, urea, chlorides, earthy and alkaline phosphates all relatively diminished; albumin \(\frac{1}{8} \sigma + \); sugar absent. In the sediment were a few leucocytes and round cells like neck of bladder, numerous hyaline and finely granular casts, few of large diameter, numerous granular renal cells, and an occasional abnormal blood globule. After close observation for one week, the amount of urine was found to be much increased (urine chart). Its examination showed the following: very pale, acid, 1.007, coloring matters and solids much diminished, a trace of albumin, sugar absent. The sediment contained numerous hyaline and finely granular casts and granular renal epithelial cells, and an occasional leucocyte. No fat or blood seen.

¹ Read before the Clinical Section of the Suffolk District Medical Society, May 16, 1894.

The patient complained of general weakness, constant headache and pain in the loins and abdomen. His condition remained much the same to the twenty-seventh day of observation, when the amount of urine suddenly fell from 120 oz. to 68 oz. At this time he had a convulsion, preceded only by intense headache and a "pin-hole" contraction of both pupils. This latter condition was noticed also during, and for several hours after, the convulsion. An effort to produce diaphoresis was successful and that by a hot-air bath.

The urine following this convulsion was very pale, acid, specific gravity 1.008, coloring matters and solids relatively diminished, albumin \(\frac{1}{3}\)%, sugar absent. In the sediment there were many reual casts, mostly hyaline, and an occasional one finely granular, also numerous granular renal cells. No blood seen.

He was fairly comfortable for the following week, excepting for an almost constant headache. On the thirty-fifth day of observation, however, he began to show uræmic symptoms, by vomiting and, in the words of the patient, "a splitting headache."

The amount of urine was found to be considerably less than the average (chart, thirty-fifth day). A hotair bath was given and sweating was profuse. Following this, there was an increase in the daily amount of urine from 80 oz. to 120 oz. In a week's time he was given his clothes. The headache continued more or less constant, and cedema of the feet and legs was quite troublesome. As will be seen from the chart, the daily amount of urine averaged from 110 oz. to 140 oz. until the forty-eighth and forty-ninth days of his stay in the hospital, when it was evident that "trouble was brewing," for the amount of urine had fallen to 48 oz. On the evening of the fiftieth day he said he had "pain all over the body," numbness of the fingers, and chilly sensations. There was vomiting, severe headache and the very marked contraction of both pupils. Covering him with extra blankets and placing heaters about him produced marked diaphoresis with an abatement of the above symptoms.

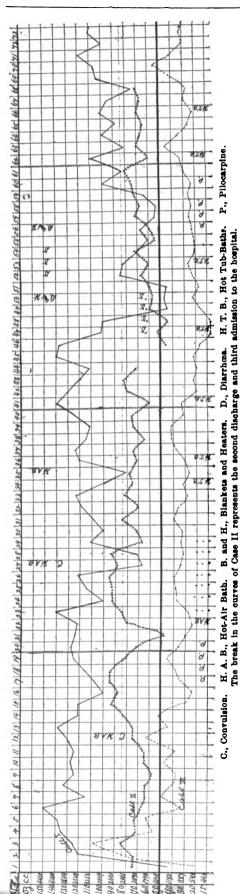
From this time the daily amount of urine gradually rose to 85 oz., and again declined, but attended on the fifty-second, fifty-third and fifth-fourth days by a rather profuse diarrheea.

Another convulsion was undoubtedly prevented on the fifty-sixth day by promptly sweating the patient.

His condition gradually improved, and he was able to be about the ward, but the general weakness was very evident. There was still a complaint of pain in the loins, some headache and cedema of legs and feet.

He was discharged on the seventy-eighth day of his stay in the hospital. At this time the urine was pale, acid, specific gravity 1.011, coloring matters and all solids relatively diminished, a large trace of albumin, sugar absent. In the sediment were a few hyaline and finely granular casts, a few granular renal cells and leucocytes, and an occasional squamous bladder epithelial cell.

Just three months from this time he was again brought into the hospital, and admitted to the service of Dr. C. F. Folsom; but, at this time, in an unconscious condition, having been found on the street by the police. After regaining consciousness, however, he said that, since his discharge, he had had a convulsion every two to three weeks, and with a gradual loss of strength.



Examination showed cedema of the lungs and general anasarca. The mitral systolic murmur was very loud and transmitted into the axilla and back. The urine had a pale color, acid, specific gravity 1.010, coloring matters and solids relatively much diminished, albumin \(\frac{1}{2}\theta_0 \), sugar absent. In the sediment there were numerous hyaline, granular and an occasional waxy cast, a few with renal epithelial cells adherent; also numerous free granular renal cells and an occasional abnormal blood globule.

Death occurred two days after entrance. No autopsy was obtained. The twenty-four-hour amount of urine for the first day in the hospital was 10 oz. and for the second only 3 oz.

CASE II. C. M., forty-five years old, a slater by occupation, was admitted to the service of Dr. A. L. Mason, at the Boston City Hospital, in 1892.

He had been in the hospital twice before, the first time in 1890, for excessive drinking, together with general anasarca. The urine at this time was reported to be negative. He had improved to such an extent that, in two weeks' time he was able to go home.

to go home.

He returned a second time in 1891, with all the evidences of a nephritis. The urine showed a pale color, specific gravity 1.018, albumin ½% —. In the sediment there was found an excess of renal epithelial cells (mostly fatty), numerous hyaline and finely granular and fatty casts, a few compound granule cells, and an occasional abnormal blood globule. The face and extremities were swollen, also some fluid in the abdominal cavity. A systolic mitral murmur was heard at this time, not noted on the first admission.

He had one uræmic attack on the twelfth day of his stay in the hospital. A hot-air bath was given, with good results. From this time he seemed to improve considerably, the ædema of the face and extremities entirely disappearing, and after six weeks of observation and treatment, was discharged.

The character of the urine the day before discharge was pale, specific gravity 1.014, albumin \(\frac{1}{8} \) to \(\frac{1}{4} \% \). In the sediment were numerous hyaline, granular and fatty casts; numerous free renal cells; a few fatty and an occasional compound granule cell and abnormal blood globule; a few leucocytes and cells like neck of bladder. The daily amount of urine, as may be seen by the chart, was increased above the normal during this whole period, excepting on the day when it was found necessary to give a hotair bath.

On entering the hospital a third time, it was found that he could not remember of having been ill previous to 1890. His work exposed him somewhat to inclemencies of the weather; but, as far as known, he never suffered from it. He began to notice swelling of his feet, legs and abdomen, one month before entrance, at which time he had been on a protracted "spree." Since then he had had periodic attacks of vomiting, diarrhos and headache.

The urine was found to be pale, acid, specific gravity 1.013, albumin 1%. In the sediment were found an excess of hyaline, granular and epithelial casts (an occasional one fatty); many renal epithelial cells (most of them fatty); a little free fat and an occasional blood globule; also a few compound granule cells.

On physical examination the face was found to be puffy, and there was general anasarca. A slight enlargement of the heart's area was noted, and a distinct mitral systolic murmur transmitted into the axilla. The aortic second sound was somewhat accentuated. There was cedema of the lungs and evidence of considerable fluid in the abdominal cavity.

The day following admission he began to have rather a profuse diarrhœa, which continued for four days, and at this time the cedema began to diminish.

After two weeks in bed he was allowed to sit up in a chair with blankets, and four days later was given his clothes. His improvement was uninterrupted; and on the twenty-seventh day of his stay in the hospital, he was discharged, his general condition being very good, except for his kidneys. The urine on the

day before discharge was pale, acid, specific gravity 1.010, albumin 1% +. In the sediment were found numerous hyaline and granular casts, some with renal epithelium and fat adherent, numerous free renal epithelial cells, some fatty, a little free fat, a few compound granule cells, also an occasional blood globule.

CASE III. R. F., seventeen years old, a confectioner, was admitted to the Boston City Hospital on the service of Dr. V. Y. Bowditch. The family history was good. He had measles when about eight years old; since then he has been well and strong. His habits have been exceptionally good.

The first evidence of his present trouble was noticed six weeks before entrance to the hospital, when he found that both thighs were considerably swollen after going in bathing, and two days later the feet began to There had been some cough. No trouble was noticed with the eyesight.

The physical examination showed a well-developed boy of good color. The heart's area was enlarged, but all the sounds seemed to be normal. There was fluid in both plural cavities and a slight cedema of the lungs. The line of fluid in the abdominal cavity reached the umbilicus, and there was marked cedema of the prepuce, scrotum, and of both extremities.

The urine was normal in color, acid, specific gravity 1.016. The urophæin and indoxyl were both normal; urea and chlorides were diminished; phosphates normal; uric acid increased. The albumin was quantitated by means of Esbach's albuminometer, with a solution of picric and citric acids, and found to be 1%. Sugar was absent. In the sediment were found an excess of hyaline and finely granular casts, many with fat and renal epithelial cells adherent; a few fatty casts; numerous free renal cells, a few fatty; a few compound granule cells; and an occasional blood globule.

Four days after entrance the eyes were examined by

Dr. E. E. Jack, who found both normal.

There was little change in the patient's condition, excepting for rather severe attacks of epistaxis from time to time, until the seventeenth day of observation, when an effort to produce diaphoresis by the use of pilocarpine was thought best, because of the increase rather than a diminution in the amount of cedema. This treatment was fairly satisfactory for two or three days, when it ceased to act; and then daily hot-air baths were resorted to. He responded well to each one of these to the twenty-ninth day, when the skin failed to respond to this stimulus. There was still no apparent decrease in the amount of ædema.

An examination of the urine on the thirty-third day showed the twenty four-hour amount to be 28 oz.; color normal, acid, specific gravity 1.026. Urophæin was diminished, indoxyl much increased, and urea relatively increased, but by quantitating, was found to be 2%, or 16 grammes, in twenty-four hours. chlorides were slightly diminished relatively. Albumin quantitated showed 1%. Sugar absent. In the sediment were many renal casts, mostly hyaline, granular, fatty, and an occasional very highly refracting cast, like waxy; a few casts with renal epithelial, fatty renal epithelial, and compound granule cells adherent; numerous free renal epithelial cells, nearly all fatty; and also numerous free compound granule cells. No blood seen.

There was free action of the bowels after the use of magnesium sulphate when it was retained by the

stomach, but unfortunately it was frequently vomited. On the thirty-fourth day in the hospital hot tub-baths were substituted for the hot-air baths. They were used from time to time, together with pilocarpine, during the remainder of his stay in the hospital. The use of eleterium was unsuccessful, as it had very little action on the bowels, and frequently caused vomiting.

The patient was discharged from the hospital, not relieved, on the one-hundred-sixth day of observation. At this time there was marked pallor, and no apparent diminution in the amount of œdema. The pleural and abdominal cavities still contained fluid, and his general condition on the whole was not as good as at the time of entrance. The amount of urine for a week past had been ranging between 30 oz. and 45 oz., and on the day previous to discharge was normal in color, acid, specific gravity 1.021. The urophæin and all the solids were relatively diminished; indoxyl much increased; urea quantitated showed about 20 grammes eliminated in twenty-four hours; albumin quantitated showed 10%. In the sediment were numerous hyaline casts of medium and large diameter; an occasional finely granular and very highly refracting cast, like waxy; a few casts with renal epithelial, fatty renal epithelial and fat adherent; numerous free renal cells, an occasional one fatty; and only an occasional compound granule cell.

I have reviewed these three cases with especial reference to their comparison. We have in Case I a fair clinical type of chronic nephritis (chronic interstitial nephritis) having lead as its probable cause. The insidious onset of the disease is quite evident, as it is fair to presume that it had been in progress for a number of years, although the patient seemed perfectly well to within nine months of his death.

Two of the most important elements in making a diagnosis in this case are:

- (1) The amount of urine which, as may be seen by the curves on the chart, was almost invariably above the average normal (50 oz., or 1,478 c. c.), reaching only once 150 oz., or 4,435 c. c. On the day preceding a uræmic attack or a convulsion, there was always a fall in the daily amount, on only one occasion going below 50 oz.
- (2) The character of the urinary sediment, which was found to consist on every examination, of renal casts, together with granular renal epithelium, and the virtual absence of blood and fat.

A point of especial interest, in this case, was the contracted pupil, which was invariably seen before, during and for several hours after, every uræmic attack or convulsion.

Case II represents one of chronic diffuse nephritis, but in which an attributable cause for the disease is less evident than in Case I. Yet I think it fair to suppose that since the patient was habitually addicted to excesses of alcohol, he had had, at some time, a catarrhal or acute nephritis, possibly as a result of exposure, and the disease had finally resulted in a chronic condition. The daily amount of urine was, with only three exceptions, constantly above the normal, ranging between 60 oz. and 90 oz. the greater part of the time.

The quantity of albumin we found was larger than in Case I where it was most of the time a trace, going exceptionally as high as $\frac{1}{8}\%$. In this case, however, it varied between \{ and \{ \frac{1}{2}} \%.

As to the urinary sediment we found that it con-

tained a considerable amount of fat, yet not excessive, with now and then an occasional blood globule.

Case III gives us an example of subacute nephritis (chronic parenchymatous nephritis), probably having its origin in measles nine years before, the health of the patient being apparently good until, following the use of a cold bath, the kidneys failed, in a measure, to perform the work required. The daily average of the urine fluctuated between 20 oz. and 40 oz.

The amount of albumin was always large, going, on one occasion, as high as 1%.

The sediment contained always an excess of fat and very little or no blood.

An important feature of this case was the resistance to all forms of treatment and especially the effort to relieve the kidneys by diaphoresis, also the comparative freedom from uramia with the presence of an extensive cedema.

RECURRENT OCULO-MOTOR PARALYSIS.1

REPORT OF A CASE WITH RECURRENT ANÆSTHESIA IN THE DISTRIBUTION OF THE FIFTH NERVE.

BY PHILIP COOMBS KNAPP, A.M., M.D., Clinical Instructor in Diseases of the Nervous System, Harvard Medical School; Physician for Diseases of the Nervous System, Boston City Hospital.

THE following case, although differing in some of its symptoms from many of the cases of recurrent paralysis of the third nerve, may nevertheless be classed with such cases; and, on account of the rarity of such affections, it seems worthy to be reported, even though the history is incomplete.

J. F., forty-one, single, a clerk, was referred to me on the 9th of February, 1898, by Dr. B. Joy Jeffries. His mother died after a severe and painful illness, the precise nature of which was uncertain, during which her mind was considerably affected. His sister suffers much from neuralgia. Beyond this nothing could be learned as to the family history. The patient himself was a delicate child, and in early life had sores on his head. Years ago he had a mild attack of gonorrhœa, but he denied syphilis. He used alcoholic drinks in moderation, and smoked a good deal. He has had some pain in the knees every spring, and he is subject to attacks of tonsillitis. Otherwise his health of late years has been good.

About a year before he came to see me, he was attacked with a severe neuralgic pain in the left side of the head, accompanied with nausea, vomiting, numbness in the left side of the face, and ptosis of the left eyelid. When he lifted the lid with the finger he saw double, and found that the eye was turned outwards. A touch upon the face was felt as if the face were covered with leather and the touch were felt through it. This trouble lasted seven weeks, and then the pain stopped suddenly and completely, and he could open the eye and move it as usual. There was after that no diplopia or paralysis of accommodation, but he did not pay especial attention to the condition of the pupil.

In the middle of December, 1892, he began to have soreness and a grumbling pain in the left side of the head. By Christmas time this had increased to a very severe neuralgic pain, with nausea and vomiting. This pain was so bad as to prevent him from sleeping and make him almost insane. The pain was usually worse

¹ Read before the American Neurological Association at Washington, May 31, 1894.

about five in the afternoon. With the onset of the severe pain the left eye closed, and just before that he had diplopia, and found that the eye was turned outwards. After two or three weeks the nausea and vomiting disappeared, and the pain began to subside. At the time he consulted me he had comparatively little pain, but the face near the eye, and especially below the eye and on the nose, was extremely sensitive to the slightest pressure, and it had a numb, burned, singed feeling. A slight jar or a draught of cool air would bring back the severe pain. Since the cessation of the nausea and vomiting, his appetite and digestion had been, as usual, tolerably good. About once a fortnight he has had a sudden stoppage of the urine for a few seconds, followed by a sudden rush of urine and a slight pain in the penis. The paralysis of the eye was unchanged. He complained much of soreness inside the left nostril, as if there were sores there, and of a discharge of thick lumps of bloody mucus, which were very hard to get out. After clearing the nostril in the morning, the pain and tenderness diminished. He dreaded the light somewhat, and, especially when out of doors, kept the eye covered with a thick handkerchief. Notwithstanding the pain and paralysis, he attended to his business as usual. He had no other symptoms.

The man was rather small, fairly nourished, and only moderately developed. There was complete ptosis of the left eye; the left pupil was dilated and immobile, and the eye was turned outwards beyond the median line. The eye could be turned outwards to the external canthus, rotated slightly downwards and outwards, and, when turned outwards it could be brought back toward the median line, but not to it. The right eye could be moved normally. Vision with either eye was § metres (Burchardt's tests), but the effort to look at the chart caused pain. The accommodation was paralyzed in the left eye. Owing to the ptosis, photophobia and pain it was not possible to make an accurate test of the visual field, but it seemed normal with a rough test.

The sensibility was diminished over the upper part of the left side of the face; there was distinct anæsthesia of the upper lip, nose and cheek, extending outwards to the beginning of the beard, upwards to the lower edge of the orbit, and inwards to the median line; there was diminished sensibility of the lids and skin covering the orbit; above the upper eyebrow a light touch could be felt at once, but it did not feel natural, it felt as though the skin were covered with leather. This area of perverted sensibility extended outwards to a line an inch outside of the external angular process, and backwards to the coronal suture, (see diagram on page 309). Pressure over the whole region was painful, but the tenderest part was over the most anæsthetic region, especially over a spot on the side of the nose. Sensibility elsewhere was nor-

Motion elsewhere was unimpaired. The face felt stiff as he moved it, but the tongue and facial and masticatory muscles moved naturally. The grasp by the dynamometer was 37 kg. with the right hand and 42 kg. with the left. The pulse was 88. Examination of the chest, abdomen, reflexes and urine showed nothing remarkable. The pharynx showed slight catarrhal inflammation; the mucous membrane of the nose showed redness, swelling and some mucous discharge, but no ulcerations, crusts or hæmorrhages.

He was given thirty grains of potassium iodide, and a sixteenth of a grain of biniodide of mercury, three times a day, with a mild antiseptic spray for the nose. This speedily caused symptoms of iodism, with an increase in the pain and no change in the paralysis. On the 16th the iodide was increased to a drachm, and a two-hundredth of a grain of aconitine was given. On the 22d he could open the eye a little, move it inwards a little beyond the median line, and move it somewhat up and down, but the up-and-down movement was accompanied by some rotation of the ball. The pupil reacted slightly to light. The pain was diminished, but there was much itching of the face. There was less soreness of the nose, and the discharge was thinner and contained fewer lumps.

On the 1st of March he could open the eye fairly well, but he preferred to keep it closed; he could turn the eye inwards to a point half-way between the internal canthus and the median line, and turn it much better upwards and downwards. There was still much pain and great tenderness on touching the nose. The anæsthesia was less pronounced. The nasal discharge was less. The aconitine and mercury were omitted; ten grains of phenacetine were given three times a day, and the stable application of the anode was made over the painful region, with a current of 3 milliampères. On the 5th he complained of soreness of the nose and mouth, and an increase of the nasal discharge. There was some conjunctivitis, and considerable acue, a large pustule having formed just within the nostril. The nose was swollen. There was also photophobia. The iodide was omitted and the phenacetine increased to fifteen grains. On the 8th the pain, tenderness and swelling were much diminished. The eye could be moved much better, but there was diplopia except on looking to the extreme left. The phenacetine was reduced to ten grains.

On the 12th of March he could very nearly unite the two images of an object directly in front of him, but after a few seconds the left image went out about six inches, and it stood a trifle below the other. With the right eye covered the left eye could be used fairly well, but the effort to open it widely caused pain. There was less pain and numbness, and the scalp was not so tender. The phenacetine was reduced to five grains.

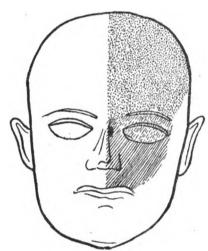
March 15th. For a day or two the pain has been somewhat worse; the nose is somewhat tender and feels to him when touched, as if it were covered over with leather, through which the touch is felt. The eyes feel tired and there is much photophobia in the left eye. The eye can be moved fairly well, but there is diplopia, except when he looks to the left. The pupils are equal, and both react normally to light. The phenacetine was omitted and a thirtieth of a grain of strychnine given three times a day, with a two-percent. cocaine solution to use in the eye. The galvanism was continued.

March 20th. The pain had ceased, but the eye-ball was still somewhat sore. He now keeps the eye open most of the time. There is no diplopia on looking straight ahead at a distant object, but there is slight diplopia when it is brought within six inches of the eyes, and distinct diplopia when he looks at an object to the right.

March 25th. He still has some pain, and a prickling sensation about the nose and cheek. One corner of the eye feels dry, and the nose feels leathery, but that time the recovery was not complete. The intoler-

he can perceive the slightest touch. He has a little diplopia on looking to the right, but he keeps the left eye open, and in ordinary use he has no diplopia. Things look a little yellower and darker with the right eye, but vision with the test-types shows no difference in visual power in the two eyes, and the fundus oculi is alike in the two eyes.

April 16th. After the last visit he discontinued treatment, but on the 29th of March the pain returned, accompanied by a cold feeling in the face and scalp and same sharp pains. These soon subsided, but he has the numb feeling about the nose and the soreness. The nose feels dry and stuffed, and the scalp a trifle cold. He can feel the slightest touch on the face, but over the whole area that was anæsthetic the sensation is not quite like that on the other side. Pressure over the left side of the nose is still painful. The left lid droops a trifle, but it can be opened fully. The sight blurs a trifle when he tries to read with both eyes, and he has a little diplopia on looking upwards, or to either side and upwards. The images seem nearer together at the bottom than at the top when looking upwards to the left. He played billiards the night before, but it was "rather queer." He was given the faradic wire-brush and the aconitine was resumed.



Dots, paræsthesia. Broken lines, partial anæsthesia. Lines, anæsthesia. Black dot, greatest tenderness.

April 23d. There is now very little pain, but a constant prickling in the face, and a sensation of burning after the wire-brush has been used. The nose feels as if there were a foreign body in it, but there is no discharge. The eye is slightly sensitive to a bright light, and, when there is a bright light, a black spot, like a spider, is seen floating below the line of vision. Motion is now normal and the diplopia has practically disappeared. A week later he reported that the pain and soreness were nearly gone, and since that date (April 30th) I have seen nothing of him, nor have I been able to hear anything from him in answer to my letters.

To sum up the case, we have a recurrent paralysis of all the branches of the left third nerve, ushered in by pain, nausea, and vomiting, and attended with anæsthesia in the upper two divisions of the fifth nerve. The first attack lasted seven weeks with probably complete recovery; the second attack was more severe and lasted nearly five months; and at the end of that time the recovery was not complete. The intoler-

ance to and inefficacy of iodide, and the absence of any specific history, have led me to think that there was not satisfactory evidence that the trouble was syphilitic.

Recurrent paralyses of the oculo-motor nerve have now been reported in sufficient numbers for us to draw some conclusions from the cases. The recurrent paralyses, moreover, are not confined solely to the hemiparesis (Hinde), abducens paralysis (Charcot), third nerve. Bernhardt, Möbius and others have reported cases of recurrent facial paralysis; Paterson, a case of recurrent abducens paralysis, and several writers cases of recurrent paralysis affecting several cranial nerves.

From the thirty-nine cases which I have collected and tabulated we can construct a fairly clear picture of the affection. The disease affects the two sexes about equally, twenty cases occurring in women and eighteen in men. The same nerve is always affected, the left nerve being involved in twenty cases, and the right in fourteen. In the great majority of cases the trouble has begun in early life; in seventeen cases it began in the first decade; in eleven cases it began in the second decade, but five of these cases suffered from recurrent headaches before the age of ten; in four cases it began in the third decade, all of which had headaches in earlier life; and in three cases only did it begin after the age of thirty, one of which had headaches in early life.

The attack in the great majority of cases begins rather suddenly, with nausea and vomiting, and severe unilateral pain in the head. In three cases (Pel, Joachim I, Manz-Nevermann) there was no nausea or vomiting; in two (Steenbuisen, Hinde-Moyer) the nausea and vomiting did not occur in the earlier attacks, and in one (Parinaud-Marie) the nausea and vomiting did not recur with every attack. Pain, too, has not been universal. In the earlier attacks in Steenhuisen's and Hinde's cases, and in every attack in Pel's case, it has been absent, and in Ormerod's case it was slight and "not like megrim." In most cases the pain has been severe, like that of migraine or supra-orbital neuralgia.

Soon after the onset of the pain paralysis of the third nerve has ensued. In some cases the pain and vomiting have ceased as soon as the paralysis has appeared; the vomiting has usually been a symptom of comparatively short duration confined to the earlier stages of an attack. In a good many cases the pain has persisted after the onset of the paralysis. In most cases all the muscles supplied by the nerve have been paralyzed, but in the case of Parinaud-Marie there was no ptosis, in Bernhardt's first case the internal rectus was most involved, and in Fürst's case the paralysis was incomplete. After a varying period, one or two days to six months, the paralysis has disappeared, either wholly or in part. In fifteen cases the attack lasted less than a week, in six cases from a week to a month, in seven cases from one to three months, and in two cases over three months.

After a varying interval, from a week to four years, the attack has recurred. In eight cases the interval was less than a month, in eleven from one to six months, in eleven from six to twelve months, and in five over a year. Only in a few cases, notably in Hasner's, where the attack always came on at the menstrual period, have the attacks recurred at any definite interval. Hence the name of "periodical" paralysis so tract? often used seems less fitting.

Among the complications I may mention photophobia (Joachim I, II, Remak, my own) urticaria (Borthen), Argyll-Robertson pupils (Clark), prostration and slow pulse (Nason), purulent discharge from the eye (Andersou), swelling of the lids and nerve deafness (Vissering), contracted visual field (Thomsen-Richter), amblyopia with sensory-sensitive hemianæsthesia and and finally, anæsthesia in the distribution of the fifth nerve. This symptom, which occurred in the present case, deserves a word.

In Fürst's case there was paræsthesia of the forehead on the affected side; in Darkschewitsch's case there was diminished sensibility in the area of distribution of the upper branch of the fifth nerve; in my own case there was anæsthesia in the middle area, and perverted sensibility in the upper area; and in Vissering's case, in one attack the upper and middle areas showed diminution of sensibility, and later there was diminished sensibility in the whole distribution of the fifth nerve on that side. In no case was there any paralysis of the muscles supplied by the fifth nerve. The urticaria in Borthen's case may have some relation to a disturbance in the fifth nerve. The increased secretion from the nose on the affected side in my own case and in Nason's may be due to some disturbance in the functions of the fifth nerve.

In regard to the prognosis, it must be regarded as Three cases have resulted fatally (Gubler, Weiss, Thomsen-Richter); thirteen cases show an increase in the severity of the symptoms in successive attacks, and in eight there was also an increase in the frequency of the attacks. It must be borne in mind that in a part of the cases the paralysis has gradually increased, and has continued during the interval. Two other cases have shown an increase in the frequency of the attacks. In three cases the severity has been unchanged, and in two of these and two others the frequency was unchanged. On the other hand, in nine cases the attacks have become less severe, and in six of these they have also become less frequent. In two of the cases where the attacks have become less frequent, the severity has increased.

The ætiology of the affection is still obscure. The neuropathic taint has been observed in most of the cases, and local injury and exposure to cold have been noticed in a few instances.

The treatment is, unfortunately, rather unsatisfac-The severity of the individual attack can often be relieved; in most cases the pain will yield to phenacetine or other antineuralgic remedies, and the paralysis, although temporarily annoying, soon disappears; but unless there be distinct evidence of syphilis, we can do little to avert the recurrence of an attack; and in but few cases does syphilis seem to be an important factor. There are, of course, cases of syphilitic paralysis which show marked exacerbations, and which improve under treatment, so that they present a somewhat similar picture (Adams, Hutchinson), but they are not typical cases of recurrent paralysis.

The nature of the affection has been much discussed. Is recurrent oculo-motor paralysis, as the English and Charcot claim, merely a variety of migraine, or is it due to some gross lesion? If it be due to structural change, where is the lesion? is it in the nerve, the nucleus, the cortex, or the cortico-nuclear conducting

Even before Saundby's reported case, the first where

RECURRENT OCULO-MOTOR PARALYSIS.

	,			RECU	AAEN	T OCULO	-MOIOK			1919.		
Reporter.	Sex.	Age at onset.	Side.	Head- ache.	Vomit- ing.	Duration of attack.	Period of recurrence.	Sever-	Fre- quency.	Condition of eye in interval.	Other symptoms.	
1 Anderson	M	14 (e)*	?	Pres.	?	3 days	3 weeks	0 †	0	9	Purulent dis. from eye	
Beevor						••••	••••				No data	
8 Bernhardt, I	M	Youth	L	Pres.	?	?	1 week	_	_	Normal. Palsy	Chiefly internal rectus	
Bernhardt, II	M	10	L	Pres.	Pres.	?	1 year	?	?	later ?	••••	
5 Borthen	M	38 (16)	R	Pres.	Pres.	3-4 days	6-12 months	+	0	Norm. Pupil+	Urticaria	
Buzzard	F	28	·R	Pres.	?	Few days	2 weeks	?	?	?	Supra-orbital neuralgia	
Charcot	F	30 (15-23)	R	Pres.	Pres.	1}-2 months	1-2 years	0	0	Paresis	Sixth also paralyzed	
8 Clark	F	?	L	Pres.	Pres.	?	6 weeks	?	?	?	Argyll-Robertson pupil	
Darkschewitsch	м	13	R	Pres.	Pres.	2-3 days	11 days	?	?	Normal	Anæsthesia fifth	
) Findeisen	M	20	L	Pres.	Pres.	2½ months	6-9 months	?	?	Paresis later Pupil +	••••	
l Fürst	M	10	L	Pres.	Pres.	?	2½ years	_	?	Normal	Palsy incomplete	
2 Gubler	М	? (e)	R	?	?	Weeks	Years	+	+	?	Paræsthesia forehead	
3 Hasner	F	17	L	Pres.	Pres.	8 days	4 weeks	_	0	Paralysis	Always at menses	
Hinde-Moyer	F	7	L	Pres.	Pres.	3-4 days	3 m. to 11 y.	+	_	Normal. Palsy	Amblyopia, amaurosis,	
5 Jack	F	:6	L	(a.hs.) ‡ Pres.	(abs.) Pres.	2–3 weeks	2-9 months	_	_	later Normal. Palsy	hemianæsthesia, hemip [resis, e	
Joachim, I	F	8	L	Pres.	Abs.	Some days	Some weeks	-	_	later Palsy. Later nor-	Photophobia. Convulsio	
Joachim, II	F	25 (11)	R	Pres.	Pres.	1-2 days	2 wks., 4 m.	+	+	mal Palsy	Photophobia	
Joachim, III	F	?	?	Pres.	Pres.	?	?	?	?	?	Migraine with palsy. N	
Кларр	M	40	L	Pres.	Pres.	7 w. to 5 m.	1 year	+	9	Normal	included by J. in his tal Anæethesia fifth	
) Manz	М	14 (3)	R	Pres.	?	1 d. to sev. w.	4-6 weeks	+	?	Paralysis		
Manz-Nevermann	м	14	L	Pres.	Abs.	2 days	4-6 weeks	_	_	Paralysis		
Mauthner-Graefe	F	3	R	Pres.	Pres.	6 months	Sev. months	+	_			
3 Möbius	F	11 m.	R	Pres.	Pres.	2-3 months	1 year	+	+	Pupil +		
l Nason	М	71	L	Pres.	Pres.	Few days	3-4 weeks	?	?	Normal. Later	Prostration. Slow puls	
3 Ormerod	F	Elderly	9	Slight	7	2-3 months			l	paralysis	"Not like migraine"	
8 Parinaud-Marie	F	6-7	L	Pres.	Occas.	2-3 months	7-9 months	_	?	Normal	No ptosis	
7 Pel	M	30 (16)	L	Abs.	Abs.	1-6 days	7 attacks in	?	?	Normal	Tabes	
B Remak	м	12	L	Pres.	Pres.	2-3 weeks	2 years 3-6 months	?	+	Paresis	Photophobia	
Roosa	м	8	L	Pres.	Pres.	36 hours	8-6 weeks			Normal		
) Saundby	F	12	L	Pres.	Pres.	1 week	6-9 months	+	+	Later total par. Paralysis		
1 Senator	F	8	R	Pres.	Pres.	1-3 days	4 years	0	_	Pupil +		
2 Snell, I	F	13	L	Pres.	Pres.	3 months	6-9 months	+	+	Paralysis		
Snell, II	M	20 (10)	?	Pres.	Pres.	3-4 days	2-3 weeks	9	+	Paralysis		
Snell, III	F	18 (9)	R	Pres.	Pres.	?	4 years	?	7	Normal	2 attacks only	
5 Steenhuisen	F	2	L	Pres.	Pres.	9–10 weeks	6 months	+	+	Pupil +		
Thomsen-Richter	M	5	R	Pres.	Pres.	3-4 weeks	6 months	+	+	Paralysis	Convulsions. Dementi	
Vissering	M	9	R	Pres.	Pres.	1 week	1 w. to 5 m.		_	Normal	Ansesthesia fifth, deafne	
Wadsworth	F	8	R	Pres.	Pres.	?	1 month	_	_	Normal. Palsy	swollen lids Otorrhæa	
9 Weiss	F	Childh'd	İ	?	?	12-16 days	1 month	+	+	later Paralysis		
		<u> </u>	<u>t</u>	<u> </u>	1	1	<u> </u>	<u> </u>	<u> </u>	1 -	1	
		C	ASES	OF ALT	ERNATI	NG RECURRE	NT OCULO-M	OTOR	PAB	ALYSIS.		
Cantalamessa	F	16		Pres.	Pres.	2 weeks	1 month	+	+	••••	Both third nerves and lower seventh	
2 Daronier	127	63 (0)	l	Pres.	Pres.	2 w. to 3 m.	2 vears	9	2	Normal	Roth third nerves and	

and seventh	l Cantalamessa 2 Darquier 3 Pflüger	F F	16 63 (c) 18		Pres. Pres. Pres.	Pres. Pres.	2 weeks 2 w. to 3 m.	1 month 2 years 3 in 2 years	+ ?	+ ?	 Normal ?	Both third nerves and lower seventh Both third nerves and right seventh Both third nerves, sixth and seventh
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CASES OF RECURBENT EXTERNAL OPHTHALMOPLEGIA.

1 Camuset	M	20		?	?	1 m. to 1 yr.	5-9 years	?	?	?	Both eyes, no internal
2 Ziehen	M	39		?	?	?	?	?	?		paralysis Right then left, no inter- nal paralysis. Acute hal- [lucinatory paranola

The number in parenthesis signifies the age at which headache first began (c. congenital), the first number the age at the onset of paralysis.
† 0 signifies that the severity or frequency of the attacks has not changed.
‡ Headache and vomiting were absent in the earlier attacks.



the affection was differentiated, and before the critical study by Möbius had directed attention to the disorder, Anstie had spoken of the comparative frequency of eye-paralysis as a result of trigeminal neuralgia, and Buzzard had given a brief account of a case. tainly, when an attack recurs at comparatively frequent intervals, begins with intense headache, nausea and vomiting, and is followed by a paralysis of one oculo-motor nerve, all the symptoms disappearing in a few days, the resemblance to an attack of migraine is striking. When, however, the attack lasts for weeks, when there is a steady increase in the severity of the recurrent attacks, and when there is a permanent paresis of the eye in the interval, the resemblance ceases.

Recognizing this distinction in the cases, Senator has endeavored to divide them into two classes, the periodical paralyses and the periodically exacerbating paralyses. In the former class of cases there is complete recovery during the interval, in the latter some paresis persists. Senator regards his own case as of the first class, and thinks that as inequality of the pupils may occur under normal conditions, the persistence of an enlarged pupil in the interval in his own and other cases was of no consequence. Although we may grant that unequal pupils exist under normal conditions, nevertheless, it is hardly fair to say that an enlarged pupil has no significance in a case where there has been previously a third nerve palsy, with paralytic dilatation of the pupil. The enlargement and the sluggish reaction in such a case might fairly be regarded as evidence that there has not been a complete recovery. Even granting Senator's position, however, these cases are very distinctly in the minority. In six cases only (Fürst, Vissering, Pel, Snell III, Parinaud-Marie, and my own [?]) was the recovery complete in the interval. In four more (Borthen, Findeisen, Senator, Möbius) recovery was complete, but the pupil remained dilated, and in Borthen's case it was also sluggish in its reaction to light. In twelve cases (Charcot, Joachim II, Hasner, Thomsen-Richter, Weiss, Manz, Manz-Nevermann, Saundby, Remak, Snell I and II, Steenhuisen) there was paresis in the interval. Senator's classification, moreover, takes no account of a considerable number of cases (Nason, Jack, Bernhardt I, Hinde-Moyer, Darkschewitsch, Wadsworth, Roosa) where there was complete recovery in the interval between the earlier attacks, but gradually increasing paresis, amounting in Roosa's case to complete paralysis, in the interval between the later attacks, nor of the yet more striking case of Joachim, where at first there was paresis in the interval, but later complete

Furthermore, not all the cases that can be classed under Senator's "periodic" type can fulfil Pel's requirement of being of short duration like migraine. In the case reported by Parinaud and Marie and in my own, the attacks lasted several months, and in Snell's third case and Fürst's the duration is not stated; this leaves only the cases of Pel (which may have been a complication of tabes) and Vissering, and in the latter there was anæsthesia in the distribution of the fifth nerve. If we add the cases where the pupil was dilated in the interval, we find that the attack in Steenhuisen, Findeisen's and Möbius's cases lasted two or three months, leaving only Senator's own case and Borthen's of short duration. Turning now to the cases where there was at first complete recovery in the in-

at least four cases (Nason, Hinde-Moyer, Darkschewitsch, Roosa) where the attacks were of short duration; and in the "genuine periodically-exacerbating" cases, we find at least six (Joachim II, von Hasner, Manz, Manz-Nevermann, Saundby, Snell II) where the duration was equally brief, two to seven days. view of these facts, therefore, Senator's distinction seems hardly warrantable. The hypothesis of a structural change, gradually increasing, or, perhaps, diminishing in severity, seems much more applicable than any hypothesis of a "nerve-storm," such as many fancy migraine to be.

Senator has furthermore held that in cases of "periodic" paralysis, the paralysis was a reflex effect of the pain. The whole notion of reflex paralysis is growing rather obsolete, and such a hypothesis is not altogether satisfactory. In the first place, we see every day cases where the pain in this region is fully as severe as in recurrent oculo-motor paralysis, and yet there is no sign of palsy; and, in the second place, in several of the cases of recurrent oculo-motor paralysis (Hinde-Moyer, Ormerod, Pel) the pain has, at least in the earlier attacks, been slight or wholly absent. Vissering has suggested that the attacks were due to auto-intoxication, and Manz thinks that there may be some anomaly in the blood-supply to the pous or the Further study is necessary to confirm nerve itself. these hypotheses.

Accepting the hypothesis of a structural change, the question as to the location of the lesion has also been much discussed. We may assume that the central neuron is intact; no one holds that the trouble is due to any lesion in the cortex or in the cortico-nuclear tract. The peripheral neuron is at fault, and the only question is whether the lesion is in the nucleus or in the nerve itself.

Möbius, Pel and others hold to the nuclear origin of the palsy, and Möbius ascribes the pain to an involvement of the fibres of the fifth nerve as they pass near the third nucleus.

Mauthner considers that the limitation of the paralysis to the nerve of one side and its constant recurrence on the same side, the involvement of all the muscles supplied by the nerve, external and internal, and the existence of headache which seldom occurs in nuclear lesions, are in favor of a peripheral rather than a nuclear palsy. He did not at that time know that other nerves were sometimes involved, and he held that the absence of affections of other nerves favored this theory.

Beside the cases tabulated there are two other series of cases which have not been given sufficient attention. First, we have the cases reported by Camuset and Ziehen, where there was a recurrent paralysis affecting first one and then the other third nerve, but sparing the internal muscles of the eye. Such cases are more suggestive of a recurrent nuclear palsy.

The other series of cases are those reported by Cantalamessa, Darquier and Pflüger. In these cases there were attacks of recurrent paralysis affecting several cranial nerves. In Cantalamessa's case both third nerves and the lower branch of the seventh were involved; in Darquier's both third nerves and the right facial; and in Pflüger's case the left third, the right third, the right seventh, the right third, the right third excluding the internal muscles, and the left sixth and seventh were affected in different attacks. remembered that in the cases already cited, the sixth terval followed later by a persisting paresis, we find nerve was also involved in Charcot's case, and the fifth in Fürst's, Vissering's, Darkschewitsch's and my

Such a curious selection of nerves to be affected seems rather at variance with any progressive lesion involving the nuclei. Although paralysis of part of the muscles supplied by the third nerve is commoner in nuclear than in root lesions, partial anæsthesia in the distribution of the fifth nerve, selecting the area supplied by one of its branches, seems inconsistent with a nuclear lesion. The most tenable hypothesis is that recurrent oculo-motor paralysis is due to some vascular change, inflammatory or œdematous, in a focal lesion involving the root of the third nerve. As the ædema or exudation subsides the conducting power of the nerve is wholly or partly restored, and the paralysis disappears. In some cases the lesion may involve several nerves, and the exudation may affect only a part of the lesion, involving different nerves at different times. As the lesion progresses, it may finally affect the nerve so far as wholly to destroy its conducting power, leading, as in Roosa's case, to permanent and

The few reported autopsies confirm this hypothesis. In the three cases thus far reported there were lesions involving the nerve at its exit from the pons. In Gubler's case there was an inflammatory thickening and adhesion of the membranes involving the nerve; in Weiss's case there was a tubercular mass pressing on the nerve; and in the case of Thomsen and Richter there was a fibro-chondroma, which had separated the fibres of the nerve without destroying them.2

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PRACTISING MEDICINE UNDER MILITARY PROTEC-TION. — It is said that Miss Hamilton of India, who has recently been appointed physician of the harem of of the Ameer of Afghanistan, will be accompanied wherever she goes by a personal guard of six native soldiers. Possibly the fair patients, if not the doctor herself, may find the presence of an escort a trifle embarassing at times.

ETHER.

BY J. B. BLAKE, M.D.

IT may be accepted as a rule, that vomiting will follow complete anesthesia whenever the stomach contains solids. Exceptions to this are rare and may be dis-Even if the stomach be free from solids, most surgeons expect vomiting after ether. An analysis of cases shows, however, that under these circumstances, vomiting is absent in a considerable percentage

By the discovery of anesthetics, an enormous advance was made in preventing pain; and so great was this gain, that the lesser discomforts connected with anesthesia were at first considered either as its unavoidable accompaniments, or were overlooked en-The headache and the nausea and vomiting were gladly accepted by the grateful patient in exchange for the agony consequent on cutting. The surgeon quickly learned that the unconscious patient might inhale solid vomitus, and be asphyxiated. Therefore, he was careful that no solids should be permitted to enter the stomach for some hours before operation. The vomiting itself, robbed of its danger to life, was not considered of much importance.

But the progress of surgery was rapid; and with the increase of delicate and extensive operations, an attention to details was demanded that was before un-Particularly in operations upon the brain necessary. and abdomen, it was noticed that the vomiting was not only a discomfort to the patient, but a menace to the progress of the case. In some instances the fatal result was attributed largely to the vomiting, which closely followed the anesthetic. And this was a condition that certainly demanded investigation. operators advocated a change of anesthetic and even went so far as to substitute chloroform for ether. Exciting and predisposing causes of vomiting were studied, and attempts to modify or remove them were inaugurated. Surgeons and hospital internes endeavored in various ways - among others, with drugsto prevent these unpleasant after-effects. Unfortunately few of the results of these investigations have been published in detail; and we are ignorant of the investigation of the matter. extent of their success or their failure.

These drugs have been recommended to prevent ether-vomiting: morphia, atropia and the bromides. Morphia is open to the objection that it excites vomiting itself in many individuals. To obtain results with the bromides, large doses are necessary, and these are also irritating. While the writer was interne at the Boston City Hospital, the administration of atropia before ether was suggested by Dr. H. L. Burrell, the visiting surgeon. It was given in some fifteen cases, in thirteen of which there was no subsequent vomiting. Unfortunately, further observations were neglected on account of the press of other work.

Several writers have recommended atropia for diminishing vomiting; and it is given before ether by several operators, and in at least one hospital in this city. I have been unable to find any report of the results other than general statements; and these were, as a rule, in its favor. With the intention of obtaining more reliable data, the writer noted its effect in one hundred cases, chosen at random from the various

NOTES ON ANESTHESIA: VOMITING AFTER the Boston City Hospital the operative cases on the surgical side were available as material.

Atropia stimulates the circulation and respiration; it diminishes the secretions, particularly of the mouth, throat and bronchi; it diminishes the sensibility of the skin and mucous membrane. For many years it has been combined with morphia, chiefly because it is "a useful corrigent to the disturbing and irritating action of the latter upon the pneumogastric." these effects are desirable as a preparation to ether anesthesia. It is indeed to be regretted that they are not better marked.

In all adult cases one-sixtieth of a grain of atropia was given shortly before the patient was taken from the ward to be etherized. It was administered by the mouth, in the hope to gain a little by its direct action upon the stomach. In the children's cases - who stand atropia particularly well - the amount given was a hundred-and-twentieth of a grain. No change was made in the usual preparations for ether, nor in the method of its administration. Cases were chosen from children's wards and adult male and female wards at random. The operations varied from the amputation of a finger to celiotomy; among them were several emergency cases, in which solid food had been taken shortly before the operation; and in at least one of these no vomiting followed. The intention was to make the test as thorough as possible, and to discover what effect, if any, the drug produced.

About twenty of the hundred cases were private operations outside the hospital. In these the percentage of vomiting was very high - from two to three times greater than the hospital cases. The outside operations were almost exclusively uterine or genito-

Of the hundred cases, seventy-one did not vomit at all, and of the remaining twenty-nine, at least onethird vomited but once and very slightly. About onehalf of the laparotomies progressed without vomiting.

No attempt was made to tabulate carefully the percentages in the different operations, nor the relation of the time of etherization to the vomiting. It was the intention to note these details in a second series of cases, if the result of the first series justified further

In order to make a closer comparison, atropia was omitted in certain cases. The final results showed that, with atropia, vomiting was absent in 71 per cent. of all cases, and, without atropia, in 43 per cent. It is obvious from these figures that the administration of atropia does not prevent vomiting after ether in all cases; and it seems probable that this ideal can never be completely realized. But the causes which excite, or predispose to vomiting are worth considering, with a view towards their removal. They are numerous

The vomiting which follows ether is almost entirely central in character, and due to the engorgement and irritation of the vomiting centre in the brain. Whatever tends either to increase this irritation or to reduce the power of the system to resist it, necessarily favors the vomiting. The irritation is increased by an increased amount of ether inhaled, and by an increased time of inhalation, which, of course, may be two very distinct And the physiological resistance to this irritation is diminished by a lowering of the general condition and by a continued shock of a severe operation; Through the kindness of the visiting surgeons of also by that individual peculiarity which characterizes

those who possess what is called a "weak stomach." The manner in which the ether is administered may have a very decided influence on the vomiting. As a rule, it has a distinctly undesirable effect. Direct irritation of the stomach, either from blood which is swallowed or by manipulation upon the stomach itself, is a disturbing element. The position of the patient may react undesirably; the Trendelenberg position, if long continued, by pressing stomach against diaphragm, and this in turn against heart and lung, not only interferes with respiration and circulation, but also favors subsequent vomiting.

In an ideal surgical operation, the objectionable features above enumerated must be eliminated as completely as possible, without infringing upon other proper details. Every preparation which can be completed before the administration of the ether should be attended to, that the total time under ether may be as short as possible. The etherizer should be carefully trained, and should give his entire attention to the administration of the anesthetic. This is of the first importance, and if carried out conscientiously and carefully, the etherizer will have no time to watch the operation. It is by no means an easy thing to keep a patient just under the power of the anesthetic, and no more - an impossible thing if the etherizer is thinking of other matters. This suggests the fact that a wellknown surgeon once said that a screen should be placed between the etherizer and the field of operation; to which it has been answered that the man who needed a screen to keep his thoughts on his work might fall asleep behind it.

In regard to the Trendelenberg position, the operator should remember that it favors vomiting and increases shock, and should not unnecessarily prolong its

The individual peculiarity of a "weak stomach," or direct irritation of the stomach itself, we cannot combat unless it be by atropia.

The administration of atropia does not seem to carry with it any unpleasant effect. One surgeon thought he noticed a blueness of the face and head in those cases in which it was used; but none of the others observed this. However insufficient the effects of atropia are, they are, at all events, in the right direction. If combined with a mininum amount of ether properly given, a mininum time of operation, and a maximum of care and preparation of the patient before operation, it is probable that ether-vomiting can be greatly diminished, both to the comfort of the patient and to the satisfaction of the surgeon.

Clinical Department.

FATAL VOMITING WITHOUT DISCOVERABLE CAUSE.1

BY HERMAN F. VICKERY, M.D.,

Physician to Out-Patients, Massachusetts General Hospital; Instructor in Clinical Medicine, Harvard University.

Mr. F. A. B. was a married man, thirty-eight years old, of excellent family history, except that one of his two brothers had been somewhat dyspeptic for ten years. His own health was unbroken till, at the age of twenty-three, he went to California, where he was

¹ Read before the Clinical Section of the Suffolk District Medical Society, May 16, 1894.

engaged in making doors and mouldings. There he became afflicted with "catarrh," ascribed to the wooddust; but upon going to Southern California and changing his occupation to that of locomotive fireman, he recovered completely. For five years before his last illness he was occupied as chief engineer in a large factory in Foxboro, Mass. He was a man of good habits, very ambitious and industrious. Some three months before I saw him he felt rather listless and tired; and he gradually lost about ten pounds weight, when he began to take the compound known as "Hood's Sarsaparilla." While using this he regained his weight, but his mother and brother noticed a certain puffiness about his neck and face; so that after swallowing some three bottles, he left off the remedy two or three weeks before the attack began which I am about to describe.

He was feeling as well as usual when he first vomited. A steam-pipe had burst; and he was employed, with several assistants, in repairing it, one night in April, 1892, about three weeks before I saw him, when he became nauseated, and evacuated the contents of his stomach. A plate of baked beans had formed a part of his last meal. He attached no importance to the vomiting, and resumed and completed his work. For some days thereafter he did not feel badly in any way except that his stomach was unable to retain food. He was seen, once only, by Dr. Crane, of Foxboro, who treated him for acute indigestion.

April 17th, Dr. W. C. Crocker, of Foxboro, was sent for. He kindly furnished me with the following statement: "I was called to Mr. F. B., April 17, 1892. Found patient retching and vomiting, but temperature normal. The face appeared to be somewhat bloated, flushed, and conjunctive injected. Vomiting was relieved. Called April 18th, and found patient had taken and retained some gruel and was feeling better. Vomiting was renewed, however, soon afterwards. April 21st, Mr. B. called at my office and complained of the same symptoms as before, which I attributed to indigestion."

On April 24th, at the end of the first week of these acute symptoms, Mr. B. called at the office of Dr. Lemuel Dickerman, who has obligingly written me the result of his observations as follows: "He told me he had been sick just one week, from vomiting and headache. His eyes were much injected, conjunctive deep pink. He was constantly winking and sensitive to light. The right pupil was very much dilated. He said his eyes had been very red the past two months, and that his head had been feeling badly, but that he could not describe the feeling. He had been vomiting pretty constantly for one week, whenever he took anything into the stomach, and was tormented by a burning thirst. Pulse 90; temperature 99°; tongue coated in the centre and red around the edges. The bowels were easily moved by a cathartic."

On the afternoon of the 26th, he was again in the doctor's office. "The right pupil was now normal, and the left dilated. The headache was relieved, but

the vomiting continued unchanged."

On the 27th, the patient took to his bed. The pupils were now natural, and so remained. The reduess and photophobia persisted. The urine was of light color, acid reaction, specific gravity 1.020, amount about thirty ounces, and with no albumin at any time. The pulse rose to 112, and on the last two days to 140 or more. The temperature did not exceed 100°.

Whatever he swallowed was immediately rejected; besides this, the vomitus consisted of mucus, till the last day but one, when it was clear bile. In spite of rectal alimentation he died of exhaustion on May 7th.

I saw the patient in consultation on the day before he died. He was extremely emaciated, feeble, and only semi-conscious. Physical examination was practically negative. There did not seem any chance for recovery. It was recommended to continue the exclusively rectal feeding, and to give opiates as demanded.

On May 9th, an autopsy was made by Dr. F. Coggeshall, of Boston, and myself, in the presence of Drs. Dickerman, Crocker and Crane. The brain and medulla oblongata were subsequently examined also by Dr. James J. Putnam, and the stomach by Dr. W. F. Whitney. The only abnormality detected was in regard to the stomach. Dr. Whitney said that it was slightly dilated and that its walls were somewhat thinned; but he did not regard the changes as important.

If we turn for a time to a consideration of the symptom of vomiting in general, we know that the act is a complex one depending upon or influenced by the following structures: 2 a respiratory centre in the medulla oblongata, the vagus, the solar plexus, the muscles of the diaphragm, abdomen and stomach; and further requiring the relaxation or dilatation of the cardia. It may be occasioned by emotional, hysterical or organic disturbances of the brain; by locomotor ataxia; by pleurisy, pneumonia or phthisis, incipient or chronic; by thoracic aneurism, pressing upon the vagus; 5 by diseases of the stomach, intestines, pancreas and liver; by peritonitis, Addison's disease, pernicious anemia, and pylephlebitis; by nephritis and by poisons as well as by other abnormal conditions which are omitted as not having even a remote bearing upon the case under consideration, such as migraine, small-pox, cholera and yellow fever.

The history of the case and the ante- and post-mortem examinations warrant the immediate rejection of almost all the diseases enumerated. Taking up the less improbable causes, we can say of poisons that the temporary bloating of the face noticed by Dr. Crocker and also reported to me when I visited the patient might suggest arsenic, but that against the supposition are the absence of purging, nervous symptoms and post-mortem lesions. There was no apparent temptation to homicide or suicide. The knee-jerk was normal; there had been no lightning pains nor ataxia, and, moreover, a fatal gastric crisis in tabes must be extremely rare.

It will be remembered that the stomach was somewhat thin and somewhat dilated. This is precisely the condition described by Dr. Tom Robinson in the Lancet of June 10, 1893. A lady with no evidence of organic disease suffered more or less from hysterical vomiting from the end of 1891 to the 25th of May, 1893. During the latter part of the time she had been more cheerful, and had sometimes retained her food. She was found one morning dead in bed. post-mortem disclosed merely a small heart and a dilated stomach with walls abnormally thin. So also in Garland's case, mentioned by Osler, of a young woman

who from the age of two till she died at twenty had attacks of vomiting, and finally died in one, there was "slight atrophy of the mucous membrane of the stomach." Cases of this sort are not so very infrequent, but they are usually seen in hysterical females; and this man was not hysterical.

We cannot put the case into the category of the primary periodic vomiting of Leyden; for it was not periodic.

Meningitis, abscess or tumor of the brain we can exclude absolutely. The possibility of some microscopic lesion of the vomiting centre cannot be brusquely rejected. The region is a very limited one, as was well shown by Professor Thumas.7 By making a deep cut in the exact central line of a dog's medulla, beginning two millimetres in front of the calamus scriptorius and ending three millimetres behind it, he produced such a condition that while apomorphia still stimulated respiration it caused no vomiting nor even nausea.

Still it seems improbable that a diseased condition capable of exerting so fatal an influence upon the vomiting centre should neither (a) disturb the neighboring respiratory centre nor (b) be detected by a practised eye on section.

Is it possible that a gastric catarrh could be so unfortunately treated as to terminate fatally? In general such a calamity is conceivable, but not to be thought of in this particular instance by any one who is aware of the experience and discretion of the attending physician — although I might say incidentally that I have been surprised in some cases to which I have been called in consultation, to find how much needed was the suggestion to abandon all attempts at the ingestion of anything whatever into the stomach and to rely wholly upon enemata.

Finally, there is one purely theoretical explanation of this strange fatality in support of which some points may be urged. It will be remembered that Mr. B. had taken three bottles of a compound which is well known to contain iodide of potash. This drug exerts a powerful influence upon the central nervous system.8 The marked conjunctivitis and the edema which our patient presented are both symptoms which iodide of potash is capable of producing. The changes in the pupils noted by Dr. Dickerman also suggest some disturbance of the nervous centres. It is true that he had not taken the drug for two or three weeks before his illness began, and that it is usually rapidly and completely eliminated from the system. Yet I cannot help asking myself whether it may not in this particular patient have exerted a unique, fatal effect.

Medical Progress.

RECENT PROGRESS IN DERMATOLOGY.

BY JOHN T. BOWEN, M.D.

TREATMENT OF PSORIASIS BY LARGE DOSES OF POTASSIC IODIDE.

GREVES was the first to suggest this method of treating psoriasis, claiming that the good effects of the drug did not begin to show themselves until four grammes daily were taken, while it required a daily dose of ten grammes, to produce a rapid result. Haslund in

Mayer in Hermann's Handbuch der Physiol., v, ii, s. 43i, et seq. Leipzig, 1881.
 Fagge. 4 Osler.
 Flint's Practice, 1881, p. 372.
 Practice of Medicine, 1892, p 362.

Virchow's Archiv., exxiii, p. 44, 1891.
 Laborde: Bull. de l' Acad. de Méd., 1890, p. 299.

1887, reported 50 cases of psoriasis treated by this method, of which 40 were completely cured, 4 greatly improved, while 6 remained uninfluenced. The duration of the treatment averaged seven weeks. Haslund concludes that we possess in the iodide of potash a drug which, given in large doses, can heal an attack of psoriasis, and that we know of no other internal remedy which works so rapidly as this. No data as to recurrences were at hand. Other observers have testified to the good results sometimes obtained from this treatment, but it has not, upon the whole, claimed very much recognition or favor.

Seifert, of Würzburg, publishes the results of his trial of this method, which was begun in 1888. Thirteen cases of psoriasis were thus treated and the result accurately described. In two cases a favorable influence was noted, but the medicine had to be stopped on account of gastric pain in one case; and in the other case the patient left the hospital. In the first case the effect of chrysarobin seemed to be increased by the preceding treatment with the iodide. This was also true in seven other cases. In four cases, affecting three women and one man, a complete cure was produced. The amount of iodide given varied from 344 to 850 grammes. An improvement was first noticed in from four to five weeks. As has been reported by other observers, these enormous doses are astonishingly well borne. The mild forms of iodine intoxication, such as increased secretion from the mucous membranes, were observed in almost all the cases. The writer comes to the conclusion that in these cases. when the iodide is given for a long time in increasing doses, there is almost always a noticeable effect on the circulation. In one case the pulse increased to 170, without corresponding increase in the temperature; and here the pulse always rose when the dose of iodide was augmented. In six cases there was a rise in temperature, which was to be directly attributed to the drug. These fever attacks may occur after small as well as after large doses.

AN EPIDEMIC OF RINGWORM IN A FRENCH ASYLUM.

Wickham² reports an epidemic of tinea tricophytina in the Lambrechts asylum, to which he was called in consultation in March, 1893. He found that an epidemic of ringworm was in progress, which had already existed for several years, and had affected 48 out of 70 children. He found the asylum in an especially clean and hygienic condition; and the inmates well cared for. It was found that the starting-point of the epidemic dated back six or seven years. For a long time the affected children had been isolated from the others, the heads washed daily with soap, and once a week with a solution of corrosive sublimate. But instead of diminishing, the epidemic had been spreading, and an increasing number of children were affected. Of the 48 cases, 6 consisted of scattered spots of tinea which could be plainly seen, while in all the others no diseased appearance could be seen at the first glance; only a careful examination revealed the presence of minute areas in the midst of healthy hairs.

The asylum was closed for a month, and during this time carefully washed and cleaned. The children were then admitted gradually, and only after they had passed a careful inspection. No fresh cases developed. The most characteristic feature of the epidemic was

Archiv. f. Derm. u. Syph., xxvii Bd., 3 Heft.
 Annales de Derm. et de Syph., June, 1894.

the large number of areas that only comprised three or four hairs, often only a single hair. The average number of patches upon a single head was 10 to 15, but some children presented very numerous small, distinct areas of disease. The smallest areas could only be discovered by a prolonged and careful examination. The diseased hairs were for the most part broken off at from one to four millimetres from the surface of the skin, but a small number were broken in their passage through the epidermis. There was no desquamation nor hyperemia at the periphery, and the surface of the skin was perfectly smooth in the bald areas. About 12 of the children had, near the scalp, upon the neck, face or hands, small erythematous scaling spots of irregular form. Microscopically, mycelium and spores were found in the hair shaft at the level of the

The characteristics of this epidemic are, then, spots of small dimension, smooth, without desquamation; hairs broken off short, without sheath, and of large size; numerous foci of secondary inoculation; hair shaft filled with mycelium made up of large square spores, with very few free spores; coexistence of spots of trichophyton of the erythematous and scaling type upon the non-hairy parts. Wickham has for some time noticed the great difference that exists between different cases of tinea tricophytina; and of late the arguments of M. Sabouraud in favor of the existence of different varieties of tinea tricophytina have seemed to him well grounded. He declares that when one has once grasped the differential characteristics, it is as easy to differentiate the varieties of tinea tricophytina, as it is to distinguish them from favus. In the epidemic in question, the cause was plainly the tricophyton megalosporon endothrix with resistant mycelium; and this was verified by cultures made by M. Sabouraud.

It is impossible to tell the exact duration of treatment that was required, as 40 per cent. of the children were still under treatment at the time of writing. Approximately it was estimated that from eight to ten months were necessary for a cure; and this form of tinea tricophytina is therefore regarded as especially rebellious. The writer considers that there is a period of apparent cure of considerable duration, when the lesions seem to have disappeared, but a few diseased hairs still remain, which are found only after a close search. For the treatment of this terminal period, as he calls it, he has employed electrolysis, electro-cautery, and croton oil. Electrolysis is used by placing the negative pole in the hair-sack, and removing the hair, as in the operation for hypertrichosis. This procedure, however, is a long one, and the results are uncertain. In using the electro-cautery the finest point is selected and quickly inserted in the direction of the hair shaft. The disadvantage of this method is that the scar is more apparent than with electrolysis. Croton oil is a remedy that has been often wrongly used. In certain schools and institutions it has been the cause of indelible scars. The writer has often observed enormous ulcerations due to the immoderate use of this remedy. Its use ought to be limited to patches of small diameter, never of large. It is also useless when there are only three or four diseased hairs, as it is much less sure than electrolysis or the electro-cautery. It is best employed pure. Idiosyncrasy plays a prominent part in its use, as certain lymphatic temperaments do not bear it well, while others resist it admirably. A drop of

the oil is put upon the scalp, which is then vigorously rubbed with absorbent cotton. Afterward the drop may be allowed to remain a longer time. In this way a mild folliculitis is produced, and the operation is repeated after the inflammation has disappeared.

This epidemic is regarded as corroborating a great many of the facts laid down by M. Sabouraud. From a clinical and histological point of view its characteristics correspond accurately with his descriptions.

THE RELATIONSHIP OF THE DERMATOSES TO INTER-NAL DISEASES.

Kaposi ⁵ again discusses this question in a communication to the medical club in Vienna, published in the Wien. Medizin Presse, 1894. It has been repeatedly asserted that for Hebra and his school, skin affections have been always purely external affections, in the vulgar sense of the word, and the reproach has been made that it was only in this sense that the Vienna school occupied itself even scientifically with the study of dermatology. This assertion Kaposi endeavors to combat, with the remark that Hebra always regarded certain skin troubles as dependent upon internal causes, and insisted upon the importance of internal or general treatment. The relationship of internal diseases and skin disorders is a very variable one, different factors playing their part: the spinal nervous system, the vaso motor system, and the chemical and morphological changes in the blood. Oftentimes it is the skin that is primarily affected, the internal organs secondarily by metastasis. Leaving out the acute exanthemata, syphilis, and those affections that are dependent on a general pathological process, acne is first considered, as an affection that is essentially a perifollicular inflammation. It is generally believed that acne is caused by various intestinal conditions, by certain articles of food, as cheese, highly-seasoned dishes, etc. It has lately been claimed that the appearance and disappearance of this disorder are in relation with certain intestinal processes (G. Singer). Possibly this may be true; but for Kaposi, remote causes of which the proof is doubtful, are unsatisfactory in the presence of positive demonstrable causes. Acne is known to affect by preference the age of puberty; in mature age it is rare, and dependent upon exceptional conditions. It is certainly known that an active process of growth occurs around the follicles at the age of puberty. It is also known that in these cases, a purely mechanical cause may produce suppuration. Here we have a direct cause, without the need of invoking indirect and uncertain causes. Other conditions, however, may produce acne, as seborrhea, tuberculosis or impaired nutrition. The follicles possess normally a certain elasticity, which may be impaired by a poor general nutrition.

Hyperidrosis of the palms and soles, uncomplicated with seborrhea, begins in certain individuals in infancy, and may persist during life. In all such cases there is an impairment of nutrition; the heart's action is feeble, the elasticity of the vessels impaired. Similar symptoms are to be ascribed sometimes to a functional affection of the whole sympathetic system; and such cases have been described under the title of "erythromelalgia." Acne rosacea is connected with alterations in the vessels, and proceeds from various causes, as alcoholism, exposure to the weather, etc. It may also arise from the condition of the stomach and intes-

• Ref. Annales de Derm. et de Syph., May, 1894.

tines, and by reflex action from the uterus and its appendages. Acne rosacea is common at the menopause, and especially in women who have no children.

Urticaria is prominent during the disorders which arise from an impairment of the vascular tonicity. It may be excited by digestive disturbances, but this is not the only cause. When produced by a particular article of food, he thinks that it may possibly be the effect of a substance that irritates the nerves of the skin by its elimination. In the case of the drug eruptions, the skin affection is partly the result of the direct action of the drug upon the nerve endings. Erythema multiforme, erythema nodosum and purpura belong in another group, and are certainly infectious diseases. The fact that eczema so often tends to recur has given rise to the theory of the obscure causation of this trouble. But urticaria has the same tendency, and they are both often produced in a reflex manner. Glycosuria has a distinct action upon the skin; there is a group of affectious which he calls diabetic dermatitis, which are caused by the deposit of sugar in the skin, and which are manifested by gangrene or by papillomatous and ulcerated lesions. He considers that pemphigus gestationis enters into this category, also impetigo herpetiformis. Lupus erythematosus is a disease that has a distinct relationship to the general health. Pruritus is often produced by glycosuria and different internal maladies. Singer has seen patients with this trouble benefited by the internal use of menthol, and regards it as due to intestinal putrefaction. It is also frequently associated with uterine troubles.

(To be continued.)

Reports of Societies.

CLINICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

HENRY JACKSON, M.D., SECRETARY.

REGULAR meeting, Wednesday, May 16, 1894, Dr. F. C. Shattuck in the chair.

DR. H. F. VICKERY read a paper on

FATAL VOMITING WITHOUT DISCOVERABLE CAUSE.1

DR. SHATTUCK: I should like to ask whether there was any change in the man's surroundings. Dr. Vickery spoke of arsenic. Is it possible that arsenic might have entered the system through an avenue other than the stomach? in which case I suppose it may not have produced the gastro-intestinal lesions. That simply occurs to me as a possibility.

DR. VICKERY: There had been no change in his mode of life; and it is usually the fact, I believe, that fatal doses of arsenic, however introduced, cause gastro-intestinal lesions.

Dr. Wood: If taken in large doses they do, but I think you may have small medicinal doses taken, enough to produce vomiting, without producing any perceptible lesion in the stomach or intestine.

DR. SHATTUCK: Merely as a supposition, if this man had got a lot of arsenic from wall-paper or some such source as that, would he necessarily have presented gastro-intestinal lesion?

DR. WOOD: It occurred to me that possibly the sarsaparilla may have a little iodide of arsenic in it.

¹ See page 314 of the Journal.

DR. VICKERY: There was no diarrhea, not one of the ordinary nervous symptoms of arsenic-poisoning, merely this vomiting; and for days he said if he could only stop vomiting he would be all right, that he did not feel ill. He had no other annoyance except this.

DR. SHATTUCK: Would it not seem as if there must have been some pretty profound influence at work, because the man did not apparently die of inanition in that time? We have all fed patients exclusively by the rectum for three weeks with comparatively little first place without any warmth at all? loss of flesh.

DR. VICKERY: I do not think the doctor tried very hard with rectal alimentation, for he did not think it worked very well in this patient. The opinion was that he died of starvation. The duration of the illness was three weeks. The stomach did not look particularly bad, and there was just about as much constipation as a person has with a good many forms of indigestion. That is all there was. The urine was free from albumin throughout. I do not know why the doctor did not succeed better with rectal alimentation. I know efforts were made; and when I got there that was one of the things I inquired about carefully.

Dr. Wood: I have seen fatal cases of poisoning by arsenic and oxalic acid without the slightest lesion of the stomach.

Dr. J. Bergen Ogden described

THREE CASES OF CHRONIC BRIGHT'S DISEASE OF DIF-FERENT TYPES.

DR. WOOD: I can add very little, indeed, to what Dr. Ogden has said in regard to these cases. They illustrate remarkably well the value from a diagnostic point of view of the daily measurement of the quantity of urine. The pure interstitial type of nephritis has that marked increase up to, on the average, 100 ounces more or less. The chronic diffuse, which is a combination of the interstitial and the subacute, or chronic parenchymatous of English authorities, is smaller in quantity, but yet above the normal on the average, the average running up to 80, 90, or 100 ounces; in that disease the quantity of urine depends upon the relative proportion of the interstitial element of the disease and of the parenchymatous. If the former predominates, the quantity of urine is correspondingly increased; if the latter, the quantity of urine is correspondingly diminished; and the proportion of albumin is the reverse. In chronic parenchymatous or subacute nephritis we find the average quantity of urine far below the normal, with a relative increase, but an absolute diminution of solids.

These cases are also interesting as showing the difference in the proportion of albumin with the difference in the quantity of urine, those cases attended with a large amount of urine having a proportionately small quantity of albumin. The interstitial type varied in the neighborhood of one-eighth per cent., the chronic diffuse from one-eighth to one-fourth, whereas the subacute was over one-fourth and between that and one per cent., running about one-half; and that has been my experience with these different types of Bright's disease when uncomplicated, that is, I mean not complicated with acute. The complication of acute nephritis with the other forms of Bright's disease is shown by the presence of blood; but in all of these cases blood was practically absent, showing that they were cases of uncomplicated Bright's disease.

² See page 305 of the Journal.

The features of the greatest importance in the differential diagnosis between the different forms of Bright's disease are the average quantity of urine, the average percentage of albumin, and the relative proportion of fat and of blood elements in the sediment. The daily quantity of urea is also exceedingly important in the diagnosis and prognosis of the different forms of chronic Bright, in my opinion.

Dr. Vickery: Was the pilocarpine given in the

Dr. Ogden: Yes, so far as I know, without any warmth. As you will see represented on the chart by the character P, it was given for four days consecutively without warmth; then it was followed a little later by hot-air baths, and then by hot tub-baths, which were given after the thirty-first day at various intervals. Pilocarpine was not given on the same days, though I know of no reason why they were not used

DR. VICKERY: My experience is that pilocarpine will often fail to work unless the patient has artificial warmth, and then it may work very well. I should like to ask how much water there was in the two sides of the chest. It occurred to me whether possibly the heart would not have acted better if that were withdrawn.

Dr. Ogden: The hospital records, as I remember, did not state exactly, but I inferred to about the angle of the scapula. My impression was, from reading the records, that there was not enough fluid at any time to interfere with the action of the heart.

Dr. Wood: Dr. Ogden mentioned in the first case, in almost every report of the sediment, numerous renal and epithelial cells; I should like to ask if they were not very granular.

Dr. OGDEN: Yes.

Dr. Wood: You find the granular epithelial cell, not the normal epithelial cell, in interstitial Bright.

AMERICAN NEUROLOGICAL ASSOCIATION.

TWENTIETH ANNUAL MEETING, WASHINGTON, D. C., MAY 30, 31 AND JUNE 1, 1894.

FIRST DAY .- WEDNESDAY. PRESIDENT'S ADDRESS.

Dr. B. Sachs, of New York, the President, after speaking of the work done by the Association, said that from the scientific point of view clinical medicine and neurology are one and inseparable. The diseases which the neurologist is called upon to recognize and to treat are such that he must necessarily maintain a deep interest in the affections of the heart, of the liver, of the stomach, and surely of the kidneys. cannot afford to neglect the lungs or even the bladder. He is asked, perhaps, a little too frequently to consider the condition of the generative organs, and he must be even better versed than the surgeon in the anatomy of nerves and muscles. The eye, the ear, and that poorest of all special organs, the nose, have claims upon him. The entire organism is his daily concern, although he may claim to be more intimately acquainted with the structure and functions of the nervous system than with any other part. He thought it a fortunate matter that we practise a speciality which cannot and should not be divorced from general medicine. And, likewise, not every medical man

is a neurologist, but every neurologist should be a student of general medicine in the broadest sense of American clinicians, with a very few exceptions, have not studied neurology, at least not seriously; and neurological knowledge, we all well know, does not come by intuition. The rule which excludes neurologists from general hospital service If altered structure and not size is the test of the disdoes harm to the cause of American medical science; the vast neurological material of our hospitals is not properly utilized for the purposes of investigation or of instruction. In conclusion, he referred to the conception of the "neuron" which has been evolved from the recent microscopical studies as a far-reaching one, and one which will be certain to exert the greatest possible influence over the study of nervous diseases within the next decade.

MYXEDEMA TREATED WITH SHEEP'S THYROID.

Dr. Samuel Ayres, of Pittsburgh, read a paper

upon this subject.

Owing to the favorable results from thyroid in some skin diseases, obesity and in the case of melancholia, the paper was chiefly devoted to suggestions as to the possibilities of the preparation in certain diseases nonmyxedematous; and it was recommended careful trial in selected cases of acute dementia, mania, melancholia, epilepsy, chorea, tetanus, anesthesia and erysipelas. But its indiscriminate employment was

strongly discouraged.

DR. STARR, of New York, presented five photographs of patients with myxedema, in three of whom unmistakable improvement was shown. He had used various preparations of the gland, but there were serious objections to many of them. He had of late made satisfactory use of the cheapest preparation on the market, which is put up in the form of tabloids, each containing five grains of the extract. eften consulted on account of the mental symptoms, which were in many instances prominent in this dis-He had frequently observed melancholia with suicidal tendencies. In eight there were symptoms of He had found it of use in neurosis of the menopause. In a number of cases of acromegaly only two seemed to be benefited. The headache was relieved, and it produced a feeling of bien être. His experience with it in paralysis agitans, epilepsy, and progressive muscular atrophy was negative.

DR. E. D. FISHER, of New York, thought that the use of thyroid extract should be confined to the There was no rational intreatment of myxedema. dication for its administration in other diseases.

The PRESIDENT dissented from this view, and believed it was but fair to try this medicine empirically, as we were not as yet familiar with the true function of the thyroid gland.

THE THYROID THEORY IN GRAVES'S DISEASE: TWO CASES TREATED BY THYROIDECTOMY.

Dr. J. ARTHUR BOOTH, of New York, treated of the above subject.

After referring to the recent investigations as to the functions of the thyroid gland and the internal administration of the thyroid extract in the treatment of myxedema, he spoke of the various theories that had been advanced in regard to the origin of Graves's disease. Two cases that had been treated by thyroidectomy were reported, with the following conclusions:

the thyroid secretion is the sole and essential factor in Graves's disease; but as microscopical examination has demonstrated an enormous hyperplasia of the secreting structure, it is certainly reasonable to suppose that these changes must have some profound effect both on the quantity and quality of secretion. (2) ease, then thyroidectomy should be considered even in those cases where there is little or no enlargement of the thyroid. (3) Cases of Graves's disease may be entirely cured by thyroidectomy. How this is brought about is not clear as yet. It may possibly be one of three ways, namely, a diminution of the functional activity of the gland substance; a relief of the stretching and irritation of the sympathetic nervefibres; or, finally, in the removal of pressure.

Dr. J. J. PUTMAN, of Boston, said that in one English case reported, the patient seemed to be cured after the use of thyroid extract. He spoke of two patients treated by operation. One was improved and the other died. In both the pulse was excessively rapid. He thought it better to operate early, and not wait until the heart's action became seriously impaired.

Dr. J. MADISON TAYLOR, of Philadelphia, had used thyroid extract in Graves's disease without any perceptible improvement. He spoke of a case occurring in a child two years of age.

DR. W. J. MORTON, of New York, believed that patients had been cured by the use of electricity. He had often seen recovery after three of four months' treatment. He preferred this to any other method.

Dr. Dercum thought it difficult to explain the favorable result occurring after operative measures, and mentioned an instance where the gland was exceedingly small.

Dr. W. A. Hammond, of Washington, asked if Dr. Morton had used any other remedy in conjunction with electricity. He (Hammond) had been accustomed to diminish the amount of fluids taken and to give digitalis or hyoscyamine, with satisfactory results.

DR. MORTON replied that he used electricity only. The PRESIDENT thought that many cases were curable, and referred to a case of a young woman in whom the disease developed rapidly after a sudden fright. She improved after a prolonged rest in bed, subsequently married, and gave birth to a healthy child, and completely recovered from her symptoms of Graves's disease.

DR. BOOTH, in closing the discussion, said that the alleged danger from operation is not borne out by statistics. In his case the patient did well. Galvanism had been faithfully used for seven months without satisfactory results.

EXOPHTHALMIC GOITRE CURED BY THYROIDECTOMY.

DR. FREDERICK PETERSON desired to put on record a case of exophthalmic goitre that had been cured by The chief points in the case were as thyroidectomy. follows:

T. R., female, native of Sweden, age thirty-four vears, consulted him in 1888 for certain symptoms that have been developing for seven years. was marked tachycardia and the pulse-rate was 120 during the several months she was under treatment. There was considerable proptosis. The von Graefe symptom was absent. Tremor of the bands and fingers was exceedingly marked. Hyperidrosis and (1) It is by no means decided that a mere excess of flushing of the cutaneous capillaries was noticeable. The thyroid gland was enlarged, especially in the left on cell-life; this is shown by other experiments which side, where the growth measured three inches in diameter and was very prominent. The thyroid tumor on the left side occasioned pressure and a good deal of subjective distress, so that he advised the removal of At this time the patient was very miserable, and her work (upon which she was dependent) was interfered with, so that she concluded to accept his advice. She would not go into a hospital here for the purpose, but she was going to Sweden for the summer, and she waited until then; the whole of the left lobe was removed by Dr. Hallen, of Linkoping, one year after Dr. Peterson had first seen her. During that year the treatment had been galvanism, digitalis, and the other usual remedies tried seriatim, but without amelioration of the symptoms.

Improvement began immediately after the operation, in 1889. He saw her very shortly after the operation, and there was diminution of the tremor. exophthalmos was lessened. The subjective symptoms had disappeared. The tachycardia grew less and less. About a month ago, five years after the thyroidectomy, he examined her again. There was no proptosis whatever, no tremor, no tachycardia, no thyroid swelling, and, in fact, the patient was well, and had been able to carry on hard work steadily ever since. The only remains of the trouble is a somewhat rapid pulse, which varies from 90 to 100.

EXPERIMENTAL INVESTIGATIONS ON THE PHYSICAL AND CHEMICAL ACTION OF THE GALVANIC CUR-RENT UPON THE LIVING ORGANISM.

by Dr. G. W. JACOBI and Dr. F. SCHWYZER, of New York.

The authors, recognizing that our scientific comprehension of the electrodynamic curative action of electricity has been obstructed by the direction as well as the manner in which the electro-physiological work has thus far been carried out, think that this obstruction can be met by the study of the chemical and physical actions of the galvanic current upon the simplest form of the organism, the living cell. With a view to answering the question, "Does the galvanic current produce any discoverable changes, physical or micro-chemical, in the single cells of the body?" the authors undertook a series of experiments upon animals (frogs, rabbits and guinea-pigs) and man, the report of which is here presented in the form of a preliminary communication.

The certain and positive results thus far obtained were: (1) that by passage of the galvanic current the red blood-corpuscles under the influence of the positive pole swell up and become increased in size, while under the influence of the negative pole they become crenated and shruuken; (2) that two animals being fixed back to back and a current passed through both from chest to chest, the entire blood in the animal acted upon by the positive pole will contain more than twenty per cent. less alkali than that of the animal that has been exposed to the influence of the nega-

While the authors believe that the majority of cells in the living body are influenced by the cataphoric action of the galvanic current, they are not willing to express an opinion whether and to what extent the physiology of the cells is thereby altered; on the other hand, the decrease of the alkalinity of the blood by

the authors have made upon spermatozoa. This influence consists in the production of a marked functional activity in the neighborhood of the cathode on account of slightly increased alkalinity, and reduced functional activity at the anode in consequence of decreased alkalinity. The results of further experiments, as well as therapeutic deductions, are promised in the near future.

DR. WILLIAM C. KRAUSS, of Buffalo, N. Y., described a

NEUROLOGICAL PERCUSSION HAMMER.

In appearance the hammer resembles the ordinary percussion hammer, such as is employed more especially on the Continent, and particularly in France and Germany. It is therefore primarily a hammer, and for the neurologist may be used for testing the tendon and muscular reflexes, and for percussing the spine and head. The handle being made of hard rubber, it becomes warm on friction; while the head, being made of metal, remains always cold. Thus we have the means for examining for thermoanesthesia. The cap on the small end of the hammer head is removable, and exposes a triangular shaped spear about one-sixth of an inch long. The other end of the head has the rounded rubber point, thus furnishing a sharp and dull point for examining for anesthesia. The spear is divisible, one-half remaining fixed in the hammerhead, the other half sliding upon a scale graduated in millimetres and inches, forming part of the handle of the hammer, making an excellent esthesiometer; on replacing the cap and removing the cap at the large end of the hammer, a camel's hair brush is exposed, giving a soft, and the metal end a hard, surface for examining the sensation. Thus we have in one instrument nearly all the apparatus necessary for making an examination of a nervous case.

SECOND DAY. - THURSDAY. A NEW NEUROGLIA STAIN.

Dr. W. J. Morton, of New York, presented some microscopic slides showing the new neuroglia stain of Weigert, presented to him by Dr. Weigert on a recent visit to Frankfort. The neuroglia fibres are stained blue, while the nerve elements are either not stained at all or at least very faintly. The medullary sheaths do not accept the stain, and thus the field is left clear for the differentiation of the neuroglia fibres. Dr. Weigert is not yet quite ready to publish this new stain, although he has been at work upon it for five years; no specimens have hitherto been exhibited on this side of the Atlantic.

CROSSED KNEE-JERK.

This was the title of a paper read conjointly by DR. GUY HINSDALE and Dr. J. MADISON TAYLOR, of Philadelphia.

It was based on studies of over one thousand cases of nervous diseases observed at the Infirmary for Nervous Diseases, Philadelphia, and the Institution for Feeble-Minded at Elwin, Pa., and Vineland, N. J. In using the term "crossed knee-jerk," it is meant that the patellar tendon being struck the opposite leg is instantly made to approach its fellow, hence the phrase "in knee-jerk" or "contra-lateral knee-jerk" may be used to describe this action. The movenent means of the current must have a very great influence observed in the limb opposite to that in which the

patella tendon is struck is not an extension of the leg so much as an adduction of the thigh (vastus internus The best attitude for eliciting the and crureus). movement is not that which permits the freest kneeierk, but demands rather more ease of lateral motion of the thigh. This is accomplished very well by seating the subject at ease in a chair with the body erect and the knees ten or twelve inches apart with the knee-joint at rather an obtuse angle, the feet being advanced a few inches. The phenomenon is observed in a small proportion of normal persons and in from twenty to thirty per cent. of the cases coming to a clinic for nervous diseases. It is distinctly proved not to be due to a communicated shock or jar to the pelvis, by reason of its absence in all cases of locomotor ataxia and its production in favorable cases on suspending the subject from the floor and observing the adduction of the thigh on tapping the patellar tendon, or, as in one case observed, tapping the tendo-Achillis.

Crossed knee-jerk is also found to be reinforceable. Tracings were shown which recorded in a normal subject an adduction in crossed knee-jerk of a sixteenth of an inch in a spastic quarter-inch, and in the latter case, under reinforcement, half an inch. Reinforcement produces the movement in some cases where it is not otherwise evident. A case was related in which a very slight tap on the patellar tendon caused violent contractions of both legs, causing the knees to smite together or cross over; a larger tap will cause, in addition, crossing of both arms in a sort of lock spasm, requiring aid afterward in stretching out the limbs. The reflex are involved in movements of this kind is held to embrace the cerebrum.

Dr. P. C. KNAPP, of Boston, read a paper on

RECURRENT OCULO-MOTOR PARALYSIS.1

Dr. MILLS had observed several cases of recurrent ocular palsy with involvement of the fifth nerve. He had also seen cases of recurrent facial paralysis. The only probable explanation in most cases is that of organic lesion. He thought Dr. Knapp's cases were probably due to lesion of root fibres.

Dr. MORTON PRINCE agreed with Dr. Knapp in believing that these cases were caused by organic lesion. He believed that pain as a localizing symptom possessed very little value. He would rather

depend upon motor and sensory paralysis.

Dr. Walton thought all cases could not be classed together. While many were of nuclear or basal origin, possibly some of the less grave cases were due to recurring edema or possibly vascular disturbance at the cortex, which would probably explain the coincidence of motor and sensory disturbance. Possibly some cases were allied to the severer form of hysteria.

Dr. Knapp, in closing the discussion, said that there was no case of complete recovery on record where there had been both motor and sensory involvement. In cases of syphilitic origin, where only one or two branches were involved, it was more likely to affect the nerve after it had left the pons.

(To be continued.)

A CHINESE proverb says that a druggist who buys and sells drugs should have two eyes, a physician who gives drugs to patients should have one eye, and a patient who takes drugs should be blind.

Recent Titerature.

The Dispensatory of the United States of America. By Drs. Geo. B. Wood and Franklin Bache. Seventeenth edition, thoroughly revised and largely rewritten, with Illustrations. By H. C. Wood, M.D., LL.D., Joseph P. Remington, Ph.M., F. C.S., and Samuel P. Sadtler, Ph.D., F.C.S., 8vo; pp. xliv, 1930; Patent Index. Philadelphia: J. B. Lippincott Co. 1894.

This Dispensatory, which now for sixty years has been the work upon materia medica most familiar to all American physicians and pharmacists, has now again appeared in a new and seventeenth edition. In this it has closely followed the last revision of the United States Pharmacopæia, of which work it was for nearly fifty years the chief commentary. As in the last edition, the work is divided into three parts. Space for the new matter in this edition has been gained by increase in the size of the page; and this, that the volume might still fit into the ordinary bookshelf have been almost entirely in the width of the page. In Section 2 of Part II, where about one thousand not official drugs are treated of (or nearly twenty-five per cent. more than in the last edition), as smaller-sized type is used, the page has been broken up into a double column, to prevent the lines becoming too long for the eye to easily follow.

A new Index of Diseases has been introduced, and it has been placed immediately before the main text of the work, that it might not in hurried consultation be confounded with the general index. The titles of articles are printed in bolder type; but otherwise the general style and make-up of the book is of the accus-

tomary excellence of previous editions.

This work, as one of the best recognized treasure-houses of pharmacological lore, is one of which no physician or pharmacist desiring to keep abreast with the times can afford to be without a copy. B. F. D.

A Text-Book of the Diseases of Women. By HENRY J. GARRIGUES, A.M., M.D. Containing three hundred and ten Engravings and Colored Plates. Philadelphia: W. B. Saunders. 1894.

Dr. Garrigues's large experience in the treatment of the diseases of women warrants us in expecting a practical and interesting book from him on the subject, nor are we disappointed. He aims to present a concise but full exposition of the nature and treatment of the diseases peculiar to women, especially adapted to the wants, first, of the physicians who have not had the advantage of hospital training, and who go to a post-graduate school; second, to those who cannot leave their practice but need information about the present state of gynecology; and, third, to undergraduates studying in medical colleges. All these claims for recognition are substantiated by a somewhat careful examination. Especially does it seem admirably adapted for a text-book. While written in a concise way, it is exceedingly full, and covers the whole ground of gynecology.

The section on the development and anatomy of the female genital organs, both as regards the text and the illustrations, is the best exposition we know; and the fulness of detail in comparison with other parts of the book is excused when we consider how incomplete the descriptions of these organs are, even in books of

anatomy.



¹ See page 306 of the Journal.

The rest of the work is clear and practical, and while avoiding all theories and unnecessary details, is full enough to give the busy practitioner what he needs for a working basis.

Aëro Therapeutics; or, the Treatment of Lung Diseases by Climate. By CHARLES THEODORE WILLIAMS, M.A., M.D. (Oxon.), F.R.C.P. London and New York: MacMillan & Co. 1894.

This is a reprint of the Lumleian Lectures for 1893, and an address on the high altitudes of Colorado delivered before the Royal Meteorological Society. In it Dr. Williams discusses the general factors and elements of climate, and then takes up its healing influences on maukind. The advantages and disadvantages of the various health-resorts which have gained reputations for their beneficial effects in pulmonary diseases are carefully considered, and the class of cases which have been shown in the author's wide experience as likely to be benefited or harmed by each is pointed out.

Not the least valuable portion of the book is the comparison of the results of different climates, as shown by his own patients. In general results the home climates yield the smallest percentage of improvement (63.7), and the largest of worse (28.0); next comes the Riviera, not much better, 65.2 and 24.80 respectively; then, with a rise of 12 per cent. improved, are sea voyages, the percentage of worse being still large (21.56). High altitudes win easily in all categories, with their 83 per cent. improved and only 141 per cent. worse. In local results the high altitudes again come first, the favorable results being nearly double those of the Riviera and home climate. In comparing the various high altitude sanitaria Dr. Williams says that Colorado has not yet produced as favorable statistics as Switzerland, but has compensatory advantages in the variety of occupations which it offers both for pleasure and profit.

The book contains much valuable information in a comparatively small space, and is an important contribution to the study of climate as a therapeutic agent.

Materia Medica, Pharmacology and Therapeutics: Inorganic Substances. By Charles D. F. Phillips, M.D., LL.D., F.R.S. (Edin). Second edition. London: J. & A. Churchill. 1894.

The present work is a new edition of one which was published in 1882, but is practically a new book, as the first issue has been long out of print, and the emendations and additions are nearly equal to the original work. The volume deals only with the inorganic substances, and Dr. Phillips has attempted no natural or artificial classification. The simple alphabetical order of elements has been followed with but few exceptions. In this we think he was wise, as any system must be somewhere incomplete, and it is not in that manner that the practitioner consults his reference books on therapeutics or materia medica.

The arrangement of material under each element is simple and lends itself to ready reference in such a manuer as to make the book useful to the physician and to the student alike.

The discussion of the physiological action of the various substances is full, and amply accompanied by references, while the fact of the author being a physician in active practice is reflected in the practical character of the sections on therapeutic effects. Unlike many works on the same subject, the sense of just and useful proportion is well maintained.

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AINHUM.

This rare disease, of which new cases are occasionally reported, was first described by Silva Lima of Bahia, in 1867. Cases were afterward reported by Hornaday and Pittman (1881), by Shephard and Morrison, by Corre and Guimaraès, and by Duhring (1884). The disease is characterized by a thickening of the derm and a constricture of the skin at the base of one or more toes, generally the fifth toe, which undergo a slow spontaneous amputation. The progress of the disease is slow; it is not due primarily to vascular obliteration. It is especially noted on the western coast of Africa, and in various parts of South America, but has been met with in Asia and the United States. The cause has not yet been definitely ascertained, though it is believed to be of neurotic origin. Shoemaker classes it, doubtless wrongly, among the cutaneous hyperplasias.1

Dr. Gordon Messum reports a case to the Lancet,² and says that this complaint is commonly met with among the Kaffirs of South Africa, and is usually limited to the little toe. The toe at its junction with the foot has the appearance of being gradually cut off by means of the continuous pressure of a ligature. His patient suffered spontaneous amputation of one of her toes after more than a year from the onset. Dr. Messum also thinks ainhum of nerve origin.

In the Lancet for December 12, 1891, is a report by Mr. Von Winckler, of the British Guiana Medical Service, of twenty cases of the disease occurring among the out-patients at the Georgetown hospital; "nineteen of the cases were blacks," the twentieth was from East Africa. They were all males. The average age was between thirty and thirty-tive years. There was no evidence of heredity to be found. In all cases the fifth toe was involved; in one case, both fifth and fourth toes of the right foot. In the majority of cases the seat of the disease was in the skin-fold which cor-

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Diseases of the Skin, p. 491.
 See page 519 of the Journal of May 21, 1891.

responds to the interphalangeal joint, and in a few cases it was in the fold over the metatarso-phalangeal joint. The appearance "was like that due to a ligature applied tightly around the toe and eating its way through." There was a marked absence of any sign of syphilis or leprosy in the cases, and no definite account of any injury was obtained. Nine of the cases gave an early history of pain; there were no subjective symptoms till an advanced stage of the disease was reached, when ulceration commenced and acute pains with burning were complained of. The duration varied considerably, the shortest time being nine months and the longest five years. Microscopically, there was hyperplasia of the fibrous tissues of the skin, together with fatty change. The artery was much thickened, the intima being more especially involved - a condition of endarteritis. In the bone, the condition resembled that of rarefying osteitis. It seemed like a deep trophic disturbance. As to treatment, this seemed to resolve itself into removal. Von Winckler does not think the disease can be due (as has been affirmed) to wearing rings on the toes; further, in none of the twenty cases had rings been worn on the fifth toe.

In the Lancet for June 30, 1892, is a letter from Dr. Thomas Murray of Trinidad, W. I., in which he refers to a case of his own. He treated the patient successfully by dividing the skin and all the tissues down to the periosteum on the side opposite to the seat of the disease. No very satisfactory reason for this treatment is given.

Professor Le Brun, in the Semaine Médicale, September 5, 1894, gives the details of a very interesting case of this disease occurring in the French hospital of Beirout, Palestine. The patient was a little girl aged eight years, an inhabitant of Mount Lebanon, of Semitic origin, not a negro. Previously to entering the hospital she had lost the little toe of the right foot by ainhum; "the member," (to quote Dr. Le Brun's description) "became detached little by little, without pain, without hemorrhage, without wound, by reason of a spontaneous constriction which began at the digito-plantar fold, and which slowly strangulated the toe at its base as if a gradually tightened string had been tied around the part." This process of spontaneous amputation took nearly four years from the time of the commencement. The toe at last fell off - " not sphacelated like a gangrenous member, but manifestly living, like a tumor removed by the écraseur." This patient was subsequently threatened with a similar spontaneous amputation of all the remaining toes of that foot, and in this state entered the Beirout hospital. No perceptible change had thus far occurred; certainly no arrest of the disease under treatment. Le Brun, in reviewing the various theories which have been framed to account for this singular malady, rejects the view of Corre and Guimaraès, who from isolated observations pronounced ainhum "an annular scleroderm." It does not belong to the category of "congenital amputations." On the other hand, it presents certain marked resemblances to Raynaud's disease. In

both diseases there is considerable fall in the temperature, a numbness, a violaceous coloration of the affected member, and a more or less intermittent or paroxysmal course. Dr. Le Brun concludes by the observation that "the alteration and disappearance of the osseous tissue in the region of the strangulation, the trophic sensory and motor disturbances observed in the member, warrant us in affirming that the constriction, leading to the amputation, is not the primary phenomenon on which the entire disease depends. The fissure is but one of the symptoms, though doubtless pathognomonic, of the affection for which some higher cause must be sought, which we can only vaguely suppose to be a tropho-neurotic lesion."

It will be seen that ainhum still remains a pathological puzzle.

THE THYROID TREATMENT OF SKIN DISEASES.

In an address delivered before the Inaugural Congress of the Dermatological Society of Great Britain and Ireland, Dr. Byrom Bramwell gave the results of his observation on the use of thyroids in dermatology.1 Dr. Bramwell modestly disclaims, at the onset, any greater knowledge of diseases of the skin than is possessed by any well-informed hospital physician. Considering first the remarkable effect of thyroid feeding upon the skin in myxedema, he remarks that this may be due both to a direct action on the skin tissues, and an indirect action through the nervous system. The latter point he recommends to the experimental pathologist for study. If this indirect action through the nervous system really exists, it perhaps affords a clue to the effect of thyroid feeding on some skin diseases, especially those that appear to be due to perverted innervation, as Morvan's disease, sclero-dactylia. syringomyelia and anesthetic leprosy.

Psoriasis is the skin disease in which the thyroid treatment is most successful. He summarizes the results obtained from the treatment of twenty cases, as follows: (1) In a very considerable proportion of cases, the thyroid treatment produces a temporary cure, the eruption entirely disappearing and the skin being left in an absolutely healthy condition. (2) In exceptional cases small doses produce a rapid improvement. (3) In others improvement is only produced after distinct symptoms of thyroidism. (4) Some obstinate cases ultimately yield to very large doses, continued for a long time. (5) That no case should be regarded as hopeless, unless thyroidism has been produced; and the largest dose which the patient can take, has been continued for at least two months. It is to be noted that in several cases the first effect of the remedy was to produce an extension of the eruption, and this was most marked in some of the cases where the treatment was most successful. (6) In some cases the treatment produces no effect. (7) Relapses are not prevented by this treatment. (8) From his present experience he is inclined to think that long-

¹ British Journal of Dermatology, July, 1894.

standing, chronic cases are more readily cured by this treatment, than the more recent ones. On the whole, the writer is rather enthusiastic in his attitude toward thyroids in psoriasis, declaring that when given in the manner he has indicated, it is the most valuable internal remedy yet discovered.

Five cases of lupus were treated by this method, and they all seemed to show that it is capable of producing considerable improvement in the disease. In all the hyperemia diminished and a certain amount of healing and cicatrization was produced. Nothing like a cure was obtained, however. He considers his experience as yet too small to warrant any decided opinion as to the value of this treatment in lupus; but his results are thus far encouraging, and up to a certain point, favorable. He recommends small doses, continued for many months.

Ichthyosis was regarded as an affection which might be impressed by the administration of thyroid, as in myxedema the skin is often coarse and ichthyotic. He has had an opportunity to try it in but one case, where it resulted in gradually clearing off the ichthyotic growth. There was a decided improvement in the course of two weeks; but the result, unfortunately, was only temporary, a new formation of scales appearing after the old ones had been detached. He thinks it possible a persistent use of the remedy may keep the disease in check, and in any event that the way in which the whole surface of the body became cleared of an ichthyotic growth that had existed for twenty-four years, was very striking.

In a case of exfoliative dermatitis no effect could be claimed for the thyroid treatment. In acute eczema his experience is too limited to allow him to make any definite statements, but he is inclined to think that it is more likely to do harm than good. Large doses in some people produce suppurative lesions of the skin. The writer has been successful in one case of infantile eczema, and in another there was distinct improvement at first, but the treatment had to be suspended. In chronic eczema he had had experience with but two cases. In one, a generalized chronic eczema in an old man, there was the most marked improvement, after many other remedies had failed.

But one case of pemphigus was treated, and in that no result was produced. In a case of alopecia it gave rise to a considerable growth of hair; and from the luxuriant growth that accompanies some cases of myxedema, it would seem possible that the thyroid may prove of value in this condition. He adds, however, that the cases that can be cured by this method are probably those that can be cured by other means.

In conclusion, a word is added as to the effects of a long-continued exhibition of the drug. The writer has not yet observed in healthy persons, or in those suffering from skin diseases, the susceptibility to the drug that is sometimes shown by patients with myxedema. Some of the patients with psoriasis seemed to be very insusceptible to the action of the drug. In several of the cases of psoriasis there was a distinct gain in weight

during the treatment by thyroids. In other cases there was a loss of weight. In some cases suppurative lesions of the skin are developed as the result of an overdose. In many cases a degree of tolerance was established after a while. The writer counsels beginning always with small doses. In psoriasis, beginning with a small dose, he increases until distinct symptoms of thyroidism are produced. He uses the dry extract in the form of tabloids or palatinoids, and always gives the remedy by the mouth.

MEDICAL NOTES.

Yellow Fever. — The British steamer Cambria, from Havana, arrived at Galveston, Tex., on September 18th, with a case of yellow fever on board. The man died on the following day, and the vessel was ordered to quarantine fifteen miles out from the city.

A NEW HOSPITAL IN DAKOTA. — The new Scandinavian Hospital in Sioux Falls, Dakota, accommodating forty patients, was formally opened on September 10th.

THE EYESIGHT OF THE ITALIAN PREMIER. — The effect of statesmanship on the eyes is apparently not a good one, as it now is necessary for Signor Crispi to have a cataract removed.

A MEDICAL SCHOOL FOR WOMEN IN RUSSIA. -A correspondent of the Lancet writes that it is proposed to found a Female Medical Institute in St. Petersburg, where women will be able to pass through a full curriculum and receive a diploma to practise, under the title of "Zhenshtchina-Vratch," or "woman doctor." The scheme of the Institute will come before the Imperial Council this autumn, and, if approved of, the Institute should not be long in getting under way. The St. Petersburg Town Council has promised to provide it with premises free of charge, and with clinical accommodation in the city hospitals. It is desired that the Institute should be endowed to such extent as to yield an annual income of 63,000 roubles (about £6,500); two-thirds of such a sum are already promised, and it is hoped that the remainder may be made up by donations and the fees of students. The scheme proposes a curriculum of four years, followed by two years of practical work in obstetric hospitals and in special cliniques for diseases of women and . children.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the week ending at noon, September 26, 1894, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 97, scarlet fever 39, measles 7, typhoid fever 66.

GIFT TO THE MARY HITCHCOCK MEMORIAL HOSPITAL. — Miss Elizabeth Billings, her brother Frederick and her two sisters, all children of the late Hon. Frederick Billings of Woodstock, Vt., have estab-

lished a free bed in perpetuity in the Mary Hitchcock Memorial Hospital at Hanover, N. H., by the gift of \$5,000, to be called the Billings Bed.

Miscellanp.

SERUM THERAPY IN DIPHTHERIA.

THE most interesting and important contribution to the recent Congress at Budapest was the report of M. Roux upon the serum therapy of diphtheria. The investigations cover a period of over three years and were carried on at the Pasteur Institute and the Hôpital des Enfants-Malades, with the assistance of MM. Martin and Chaillou.

BACTERIOLOGICAL AND EXPERIMENTAL WORK ON ANIMALS.

The process of obtaining an antitoxic serum is briefly this: by prolonged cultivation of virulent diphtheria bacilli in a specially prepared bouillon at a temperature of 37° C., with exposure to sterile air, a concentrated toxine is obtained in about three weeks, of such a strength that one-tenth of a cubic centimetre will kill a 500 gm. guinea-pig in forty-eight hours. After filtration this toxine is kept in tightly closed flasks away from the light. For the purposes of immunization this toxine is diluted with one-third of its volume of Gram's solution. While immunization was obtained in several species of animals, the horse was chosen as furnishing a larger amount of serum with greater ease, and one which of itself causes the least disturbance when injected into other animals. By injecting repeated and gradually increased doses of the toxine, a horse is rendered immune, that is, able to receive 250 c. c. of pure toxine without disturbance, in two months | no evidence at all of the disease. and twenty days.

The serum from such an animal when added to the diphtheria toxine makes it inoffensive, and the mixture injected into animals causes no disturbance even of a local nature. The mixture may be made equally well in the animal's system. The serum, whether given before, with, or after the injection of the toxine, enables an animal to endure an otherwise absolutely fatal dose of toxine. It appears from experiments which we cannot here detail that the protective influence of the sufficiently effective against the variety of streptococci serum is not exercised by destroying the toxine but by stimulating or in some way affecting the tissue-cells so that they do not respond to the poison. If the tissues have been vitisted, as by the toxine of the streptococcus, they are not responsive to the serum, and the action of the diphtheria toxine is only delayed. The dose of the serum varies with the weight of the animal, the doses of the toxine and the relative time of administration.

Most of the experiments with serum were made under the skin, but a considerable series were made upon the mucous membranes, which were of especial interest for the clinician as they gave an opportunity to study the action of the serum on the diphtheria of an external surface. Diphtheria was caused in female guinea-pigs by excoriating the mucous surfaces of the vulvæ and thereafter rubbing them with the pure made in the other care of the sick. The local treat-culture of diphtheria bacilli. The character of the ment remained the same (cleansing with solutions of inflammation and the structure of the membrane thus | boric acid); the serum was the only new element incaused is in every way similar to that in children. | troduced.

The guinea-pigs, who otherwise invariably died. recovered without exception if the serum was injected in a sufficient dose before the inoculation of the mucous membrane. In all these cases a false membrane is formed, but the redness is less extensive, the tissues less swollen and the fever less intense. After the second day the local lesions diminish, the false membranes become detached and repair sets in. Guineapigs of equal weight infected with the same virus, but not treated with the serum, died in six days. protected animals received one-ten-thousandth of their weight of serum. The result was in every case the same if the serum was injected at the same time with the inoculation of toxine.

In a second series of cases the serum was injected after inoculation; the false membrane had already been developed for about twelve hours; the redness and swelling were very marked. If at this time the serum is injected in a dose of from one to ten thousandths of the weight of the animal, it recovers without exception. In a few hours the edema ceases, and on the second day the false membrane becomes detached. After the repair of the mucous membrane no diphtheria bacilli were found. The rapidity with which the false membranes were cast off was remarkable. Unprotected animals died on the fifth or sixth

day.

The third series of cases was undertaken upon guinea-pigs and rabbits inoculated in the trachea. The guinea-pigs thus treated died, usually in three days, if not protected. The pathological appearances were in every way similar to those in children. When inoculated in the traches after having received the serum treatment, they did not take diphtheria. If the quantity of serum was not sufficient the disease, however, made its disappearance after a short delay. The animals injected with toxine after serum treatment gave

In cases of diphtheria associated with streptococci infection the serum only rarely brought about a cure: not that there was a larger amount of diphtheria toxine or that the antitoxic power of the serum was annulled, but because the cells depressed by the poison of the streptococci no longer responded to the stimulation of the serum. No better results were obtained in treating animals previously vaccinated against the streptococci; possibly the serum of the rabbits was not which was used.

CLINICAL OBSERVATION AND RESULTS IN CHILDREN.

After this long and careful experimentation the authors were prepared to apply their results to the treatment of diphtheria in children, which was done in the diphtheria ward of the Hôpital des Enfants-Malades. Treatment was begun on the first of February, 1894, and continued until July 24th, thus covering the winter months in which diphtheria is the most prevalent and severe, and the summer period when the disease is notably rare. The wards were visited each day, and all children found there were treated, whatever their condition. No discrimination was made, so that the results of several months' treatment could be fairly compared with previous times. No change was

During the years 1890, 1891, 1892 and 1893, when no serum was used, the hospital treated 3,971 children, with a mortality of from 47.64 per cent. to 58.8 per cent.; an average of 51.71 per cent. From February 1st to July 24th this year, there were 448 admissions and 109 deaths, a mortality of only 24.5 per cent. That this improvement was not due to a mild form of the disease this year is shown by the statistics of the diphtheria ward of the Trousseau Hospital, which admitted during the months of February, March, April, May and June this year 520 children. None of these patients received serum treatment, and the mortality was 60 per cent.

Operative cases have previously given an average mortality of 73.19 per cent. From February to July this year the mortality was only 49 per cent. under serum therapy. During the same period at the Trousseau Hospital, without the use of serum, the mortality of operated cases was 86 per cent.

Of the 448 cases treated, 128 were found on bacteriological examination not to have diphtheria, and 20 died immediately on entrance, without receiving serum treatment. Of the other 300 cases of true diphtheria, 78 died, a mortality of 26 per cent.

In 65 cases guinea-pigs were inoculated with bacilli from the membranes; 60 of them died within thirty hours, and three within a week; two only recovering.

Every child at entrance was given 20 c. c. of the serum in a single injection, under the skin of the flank. If bacteriological examination showed that the patient did not have diphtheria, the injection was not repeated. The injections made into the subcutaneous tissues were not painful, and in a few moments the serum was absorbed. In the great majority of cases there was no local reaction, and only where strict antiseptic precautions were neglected. In only three cases did an abscess occur, which healed rapidly after incision. In cases of true diphtheria, twenty-four hours after the first injection a second was given of from 10 to 20 c. c., which was usually sufficient to bring the case to a The pulse and temperature were taken as a guide. If these remained elevated, a third injection The average weight of the children was given. treated was 14 kilos, so that at the first injection they received a little more than a thousandth of their weight in serum. The minimum quantity of serum employed in any case was 20 c. c., the maximum 125 c. c. During the convalescence, some days after the injection of serum, an eruption resembling urticaria was occasionally noticed.

The general condition of the children treated by serum rapidly improved, provided the disease was not too far advanced. The appearance of most of the children was entirely altered from previous years. They are not pale and livid, but their color is bright and they appear gay and interested. The appetite quickly returns, and there is but slight loss of flesh. Their stay in the hospital is notably shortened.

The effect of the serum on the local lesion is most marked; within twenty-four hours the false membranes cease to extend, and within forty-eight hours they become detached, always by the third day; in seven cases only did they last longer. Bacilli disappeared from the throat at the same time with the false membranes, cultures ceasing to give colonies of the Klebs-Löffler bacillus by the third or fifth day.

The temperature rapidly falls under the action of six hours after receiving the antitoxine. It is imposthe serum; in the less severe cases the decline often sible to say how many of these children would have

occurs the day after the first injection, and is scarcely noticeable after the second day. The fall is often so sudden as to be represented by a vertical line upon the temperature chart, as if the disease had been arrested at one blow. In the severe cases the defervescence does not begin until after the second or third dose, but then falls by a rapid lysis.

The pulse varied from 120 in the benign to 140 in the severe cases, and was more slowly affected by the serum than was the temperature, frequently remaining high after the fever had ceased, and never reaching a normal rate before the temperature. After treatment by serum the pulse was never observed to have the irregularity during convalescence which was so frequent in former times.

Persistent and abundant albumin in the urine was noted only in certain of the most severe cases, and there is little doubt that the serum prevents the action of the toxine upon the kidneys and lessens to a large extent the number of cases.

The accidents consecutive to diphtheria are much rarer among those treated by serum. There were a few cases of paralysis of the palate of short duration, one case of paralysis of an inferior limb, and one of general paralysis in a child nine years old, who entered on the sixth day of the disease. The paralysis appeared three weeks after recovery, and the child died of asphyxia while eating a biscuit. Three children died of syncope—two within twenty-six hours of entrance, and one, who had had measles, on the third day.

From these experiences there seems little doubt but that every case of pure anginal diphtheria will recover if treated in season with immunized serum.

The results in mixed cases were similar to those in Cases of diphtheria associated with the staphylococcus pyogenes are more severe, but all the five cases observed recovered after a longer period. The amount of serum used varied from 30 to 50 c. c. The association with the streptococcus gave rise to the gravest cases, of which there were 35 with 12 deaths (34.2 per cent.). Omitting four who died within twenty-four hours of entrance there was a mortality of but 25.8 per cent. The duration of these cases was the longest, the children who recovered being at least fifteen days in the hospital. Under the use of serum the general symptoms were notably less severe, the pallor of the face less, the false membranes became detached more easily, and the swollen glands ceased to increase after a sufficient injection. In these cases the serum did not bring the rapid fall of temperature noticed in true diphtheria. In case the disease is to terminate favorably, the pulse falls within the first two days to 120, and remains at that rate for a considerable time.

The statistics of the operated cases, the details of which we cannot give here, point strongly to the conclusion that in cases of laryngeal obstruction operation should be delayed as long as possible after giving the serum. During the period of serum treatment only 40 per cent. of the cases came to operation, as compared with 50 per cent. or over in previous years; but of these 121 cases, 102 were operated before the injection of serum, or within twelve hours of the first dose; 14 between the twelfth and thirty-sixth hour after the beginning of treatment; and but five more than thirty-six hours after receiving the antitoxine. It is impossible to say how many of these children would have

escaped tracheotomy if the serum had been administered sooner, but there is no doubt that with the serum treatment, tracheotomy should in a large majority of cases be replaced by intubation. If the imminent danger of suffocation can be thus relieved for one or two days, there is little doubt that sufficient time will be gained to obtain a cure by the means of the serum.

The local treatment in connection with the serum therapy should be of the simplest nature. No swabbings or paintings with caustics or carbolic acid or corrosive sublimate. A douche of boric-acid solution or mixture of fifty grammes of Labarraque's solution to the litre of boiled water, two or three times a day is quite sufficient.

In concluding, Mr. Roux said that they were convinced that with better means of isolation than existed at the Paris hospital the mortality could be still further reduced.

THE FREQUENCY OF MIDDLE-EAR DISEASE IN CHILDREN.

THE most recent reports on Middle-Ear Disease in Children present the following facts:

Rascli 1 states that in the Communal Hospital in Copenhagen, in the space of thirteen months, 82 autopsies were made upon children under two years of age, and in 61, the middle-ear was examined. It was found normal in but 5. In 32, there was suppuration present on both sides. In 7, pus was found on one side, a discolored mucous secretion in the other. In 7, pus was found on one side alone, the other ear being healthy. In 8, there was a discolored mucous exudation in both ears. In 1 case, there was found on both sides a tubercular inflammation associated with caries of the temporal bone. In but 8 per cent. of the cases was the middle-ear found in an absolutely normal condition. In about 14½ per cent. there was a catarrhal inflammation, and in 70 or 75½ per cent. there was suppuration on one or both sides.

Tröltsch in 1862 reported upon the examination of the temporal bones in 25 children. In but 9 were the ears normal. In 1 there was caries on both sides. In the other 15 cases, either catarrh or suppuration was present. Of these 15, the youngest was three days, the oldest one year old.

Among 80 autopsies made by Wreden, the ears showed pathological changes in 83 per cent. In 14 they were normal; 8 of these, however, showed venous hyperemia.

Parrot reported in 1869 having examined the ears of many children at autopsy, and found almost always a discolored mucous or purulent exudation present in those dying with broncho-pneumonia.

Kutschianz, of Moscow, made a post-mortem examination of the ears of 300 children. In 70, the ears were normal; in 50 there was catarrhal inflammation present. Many had bronchitis or broncho-pneumonia. In 150, aged from two to twenty weeks, suppurative otitis was present. Three of Rasch's cases were under one month of age, 9 were between one and three months; 13 between three and six months; 19 between six and twelve months; 15 between one and two years, and 2 were two years old. Of the 3 who were less than one month, 2 were fourteen days, and 1 one day old. Twenty-one were rachitic, 8 had con-

1 Jahrbuch für Kinderheilkunde, B. xxxvii, H. iii-ıv.

genital syphilis, 10 were athreptic, and 15 tuberculous. Eleven were convalescing from pertussis. In 14 there was diarrhea. In 43, broncho-pneumonia in some form was discovered. Microscopical examination of the purulent exudation in the ear revealed the presence of the pneumococcus in 33 out of 43. This agrees with Letters's observation, who found the pneumococcus in 29 out of 31 cases examined. The membrane was perforated in but 4 out of 56 cases, and in none of these was the pneumococcus found. Letters found the pneumococcus in 31 autopsies, in otitis in 29, in broncho-pneumonia in 12, in meningitis in 2, in pleurisy, pericarditis and peritonitis each in 1. Out of 43 who had pneumonia, 42 showed inflammatory changes in the ear. In but one of those afflicted with pneumonia were the ears normal.

Kassel gives additional post-mortem studies. Out of 108 autopsies on children under one year of age, in 85 there was disease of the middle-ear. The antrum in the majority of cases was first attacked, and coutained much purulent material. The disease, Kassel thinks, is caused by the development and ascent of bacteria in the Eustachian tube, which is favored by lack of cleanliness in the infant's mouth. Bacteriological studies of this pus showed in one-half the cases the Pfeiffer's bacillus of influenza; in 10 the capsule diplococcus was found, in 4 the streptococcus, the staphylococcus in 2, and in 1 the bacillus pyocyaneus; the Fraenkel-Weichselbaum diplococcus caused the trouble in 6, the bacillus pyocyaneus in 3, Friedländer's pneumonia bacillus in one. In one case only the tubercle bacillus was found.

Correspondence.

MARRIAGE OF SYPHILITICS: STATISTICS DESIRED.

St. Paul, Minn., September 20, 1894.

MR. EDITOR: — For the purpose of securing reliable statistics on the subject of the marriage of syphilitics, I desire to enlist the assistance of those of your readers who have had experience which will be of value in determining the period when this disease ceases to be communicable and inheritable. I shall, therefore, esteem it a great favor on the part of any physician who will send me answers to the following questions; and due credit will be given in a future publication to those who desire to aid me in this work.

- (1) What is the latest period from the date of the initial lesion that you have known the disease to be communicated by a patient who has been from the first under your observation?
- (2) What is the latest period from the date of the initial lesion that you have known (a) a syphilitic man or (b) a syphilitic woman to become the parent of a syphilitic child?
- (3) Have you ever known syphilis to be either communicated or handed down, at a later period than four years from the date of the initial lesion, by an individual who has been constantly under observation during that time?

In answering these questions I should like a brief but complete history of each case and an account of the treatment that has been pursued.

I hope by this means to obtain the experience of a large number of observers and to reach a fairly reliable conclusion as to the time when we may safely permit our syphilitic patients to marry. Yours very truly,

BURNSIDE FOSTER, M.D.

METEOROLOGICAL RECORD,

For the week ending September 15th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:-

	Baro- meter	tro-Thermom-Relative Direct of win						We'th'r.						
Date.	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 ▲. Ж.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 Å. Ж.	8.00 P. M.	8.00 Å. Ж.	8.00 P. M.	Rainfall in inches
S 9 M10 T11	30.05	76 76 68	88 87 74	64 64 63	84 80 43		81 44	W. S.W. N.W.		10 7 16	5 23 8	C. O. F.	C. O. C.	
W12 T13 F14 S15	30.43	61 58 62 66	71 66 68 72	51 57 59	51 57 80 94	79 65 79 100	65 61 80 97	W. N.W. S.W. S.W.	S.E. S.W. S.W. E.	8 3 7 8	6 8 9	C. F. O.	C. C. G.	
510		-			_		-					-		_

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, SEPTEMBER 15, 1894.

	-nd	å,	į	Per	ercentage of deaths from						
Cities.	Estimated popu- lation.	Reported deaths in each.	Deaths under five years.	Infectious diseases.	Consump- tion.	Diarrhosal diseases.	Typhoid fever.	Diphtheria and croup.			
New York	1,956,000	733	357	23.80	12.46	12.46	2.62	2.90			
Chicago	1,438,000	_		_		_	_	-			
Philadelphia .	1,139.457	-	_	_	_	-		<u> </u>			
Brooklyn	1,043,000	404	216	23.28	8.88	13.20	1.20	6.72			
St. Louis	540,800		.=		=						
Boston	501,107	246	109	22.96	11.07	11.89	2.87	5.86			
Baltimore	500,000	I		~-		13.32	7.77	_			
Washington .	285,000	90	28 32	24.42	6.66	3.24	1.08	6.48			
Cincinnati	325,000	92 117	3z	16.20 34.00	12.96	17.00	1.70	4.25			
Cleveland	325,000	121		34.00	6.80	11.00	1	4.20			
Pittsburg Milwaukee	272,000 265,000				_		_	_			
Nashville	87,754	26	6	7.70	26.95		_	_			
Charleston	65,165		_	••••	20.00		_	=			
Portland	40,000	_	_	_	_	_	_	_			
Worcester	100,410	21	7	33.32	19.04	28.56	4.76	_			
Fall River	92,233	37	19	18.90	2,70	10.80	5.40	_			
Lowell	90,613	43	24	37.28	9.32	34.95	_				
Cambridge	79,607	32	16	28.17	9.39	15.65	9.39	-			
Lynn	65,123	28	11	21.42	7.14	14.28	_	-			
Springfield	50,284	13	7	45.14	7.69	30.76	_	7.69			
Lawrence	49,900	-	=					_			
New Bedford .	47,741	28	17	28.56	3.57	17.85	3.57	_			
Holyoke	43,348	10	1	40.00	_	10.00	20.00	_			
Brockton	33,939	12	6	25.00	_	8.33	20.00	8.33			
Salem	33,155	13	8	15.38	23.07	7.69	7.69	3.33			
Haverhill Malden	32,925 30,209	3	i	10.00	23.01	1.00	ı	_			
(thelese	29,806	12	7	16.66	25.00	_	l _	8.33			
Fitchburg	29,383	5	i	40.00	20.00	40.00	_	0.00			
Newton	28,837	10	3	10.00	-0.00	10,00	_	_			
Gloucester	27,293		_	_	_	_	_	_			
Taunton	26,955	6	1	16.66	16.66		_	16.66			
Waltham	22,058	12	4	8.33	_	-	_	_			
Quincy	19,642	-	_	-		111111		-			
Pittsfield	18,802	5	3	20.00	20.00	_	-	20.00			
Everett	10,585	5	3	20.00	_	_	_	20.00			
Northampton .	16,331	-	_	_		_	_	_			
Newburyport .	14,073	6	1	-	16.66		_	_			
Amesbury	10,920	6	2	-	16.66	_	_	_			

Deaths reported 2,051: under five years of age 904; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 472, consumption 217, acute lung diseases 144, diarrheal diseases 259, diphtheria and croup 95, typhoid fever 50, whooping-cough and scarlet fever 18 each, cerebro-spinal meningitis 14, malarial fever 7, measles 4, erysipelas 3, small-pox 2.

From whooping-cough New York 6, Brooklyn 3, Boston and Washington 2 each, Fall River, Lowell, Cambridge, Springfield and New Bedford 1 each. From scarlet fever Cleveland 12, Boston 3, New York 2, New Bedford 1. From cerebro-spinal meningitis Cincinnati 5, New York 4, Lynn 2, Washington, Chelsea and Waltham 1 each. From measles New York 3, Cleveland 1. From malarial fever Brooklyn 5, Nashville 2. From small-pox New York 2. From erysipelas New York 2, Brooklin 1.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 15, 1894, TO SEPTEMBER 21, 1894.

CAPTAIN EDWARD C. CARTER, assistant surgeon, is relieved from duty at Vancouver Barracks, Washington, and ordered to Fort Buford, South Dakota, for duty, relieving CAPTAIN AARON H. APPEL, assistant surgeon.

CAPTAIN APPEL, upon being relieved by CAPTAIN CARTER, will proceed without delay to Fort Ethan Allen, Vermont, and report for duty at that post.

The leave of absence for seven days granted CAPTAIN C. N. B. MACAULEY, assistant surgeon, is extended twenty-three days.

Leave of absence for twenty-one days to take effect about September 20, 1894, is granted Captain William P. Kendall, assistant surgeon.

The leave of absence for seven days granted CAPTAIN LOUIS BRECHEMIN, assistant surgeon, is extended twenty-three days.

Leave of absence for one month is granted MAJOR HENRY M. CRONKHITE, surgeon.

Leave of absence for twenty days, to take effect upon the arrival at Fort Schuyler of a medical officer to relieve him, is granted Captain W. W. Gray, assistant surgeon.

RECENT DEATHS.

W. A. M. WAINWRIGHT, M.D., died in Hartford, Conn., on September 24th.

B. F. HELPER, M.D., died at Fort Scott, Kansas, on September 22d. He was at one time President of the Kansas State Medical Society and editor of the Kansas Medical Journal He was prominent in the railroad and real estate history of the

JOHN J. MORAN, M.D., died of typhoid fever in Dorchester, September 22, 1894, aged twenty-nine years. He was a graduate of the Harvard Medical School and visiting physician, at the time of his death, to the Free Home for Consumptives and to St. Mary's Infant Asylum in Dorchester.

BOOKS AND PAMPHLETS RECEIVED.

A Practical Manual of Mental Medicine. By Dr. E. Régis. Second edition. 1894.

A Manual of Hygiene. By Mary Taylor Bissell, M.D. Published by Baker Taylor Co. New York. 1894.

Diagnostic Palpation of the Appendix Vermiform. Cases of Appendicitis. By George M. Edebohls, A.M., M.D. Reprint.

Pregnancy after Ventral Fixation of the Uterus. Report of Four Cases. By George M. Edebohls, A.M., M.D. Reprint. 1894.

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Original Articles.

STUDIES IN THE PATHOLOGY OF DIPH-THERIA.

BY J. H. WRIGHT, M.D., Assistant in Pathology, Harvard Medical School.

THE bacteriological studies of diphtheria and the Klebs-Löffler bacillus, the results of which are here reported, have been carried on under the direction of Professor Councilman in the Sears Pathological Laboratory of the Harvard Medical School and to some extent, also, in the Pathological Laboratory of the Boston City Hospital.

Practically all of the material for these studies has been derived from the contagious wards of the Boston City Hospital, for the most part during the terms of service of Dr. F. H. Williams and Dr. E. M. Buckingham, or in the period extending from October, 1893, to April, 1894. The work has comprised five

main sections, as follows:

I. A study of the virulence of the bacillus diphtheriæ in infections of the pharynx and air-passages of varying degrees of severity and duration.

II. The results of autopsies on diphtheria cases.

III. The pathological anatomy and bacteriology of

experimental diphtheria.

IV. Cases of infection of various ulcerated surfaces and other inflammatory processes with the Klebs-Löffler bacillus, as well as some other instances in which it has been isolated.

V. On the morphology and biology of the Klebs-Löffler bacillus.

A study of the virulence of the bacillus diphtheriæ in infections of the pharynx and air-passages of varying degrees of severity and duration.

The question as to whether the bacilli obtained from mild cases of diphtheria are as virulent for guinea-pigs as those derived from severe cases has received special attention at the hands of but a few investigators. most important work on this question is that of Roux and Yersin.1 These investigators inoculated guineapigs with cultures obtained from 40 fatal and 39 nonfatal cases, and compared the results. They concluded that, in general, there is a striking difference to be observed as to virulence toward guinea-pigs, between the bacilli from cases ending in death and those terminating in recovery, although the latter often furnish organisms of full virulence.

Escherich in his recent work confirmed these results, finding that in general mild cases yield weakly virulent cultures, but that the exceptions to this rule are numerous. In an earlier publication, however, he had stated that he had noted no difference in the virulence of the bacilli from cases of different degrees of severity. The writers just quoted seem to be the only ones who have studied this point especially. On the other hand, the work of other investigators (Löffler,4 v. Hofman, Zarniko, Beck, Spronk, Welch and Abbott, and others) who have inoculated guinea-pigs with the Klebs-Löffler bacillus from numbers of diphtheria cases, seems to point to no such relationship between the clinical character of the case and the effect of the bacillus derived from it upon the animal.

Another aspect of the question of the virulence of the bacillus diphtheriæ, which has received more atten-ously and with characteristic morphology.

tion, is as to whether the organism loses its virulence by long-continued residence in the air-passages of diphtheria patients.

It has been well shown by the work of Janson,10 Heubner, 11 Tobiesen 12 and Morse 18 that the bacillus may persist in the throat long after convalescence has been established. The virulence of the organism in these cases of recovery has been found by Löffler,14 Heubner, 11 Tobiesen 12 and Escherich 2 to be undiminished, while, on the other hand, Roux and Yersin 1 have stated that a progressive diminution of virulence may be observed the longer the organism remains in the throat. The last named have recorded five cases in which virulent bacilli gradually gave place to nonvirulent forms in the course of days and weeks.

A more extensive piece of work on this point is that of Tobiesen,12 in which the bacilli from 19 convalescent diphtheria cases, after their discharge from the hospital, were inoculated into guinea-pigs. Of the 19 cases, 16 were found to still furnish bacilli which killed the guinea-pigs, with the characteristic lesions at the autopsy; while on the animals inoculated from the 3 remaining cases, 2 eventually died and 1 de-

veloped paralysis.

From all the foregoing statements it would appear that in general no constant relationship can be made out between the virulence of the bacillus towards animals, and the symptoms presented by the cases from which they were derived. Having at our disposal a large number of cases of diphtheria in the contagious wards of the Boston City Hospital, it was determined to again test this question of the virulence of the bacillus in the different types of cases above referred to. With this end in view two series of cases have been The first and larger series comprises 59 cases of various degrees of severity from which the cultures have been taken at an early period of the disease when the organism could have been considered as not having been present a long time in the throat. These cultures have been inoculated into 114 guinespigs to determine their virulence. The second series comprises 23 cases in which the bacilli had been present in the throat or nose for a longer or shorter period of time when inoculated into guinea-pigs. In this series, 35 animals were used.

The methods used in the investigation have been as follows: The material for cultures has been obtained, in most of the cases, by touching the mucous membrane of the nose or throat with sterilized cotton "swabs." The "swab" consists of a piece of stiff wire, about five inches long, upon one end of which a small pledget of absorbent cotton has been wound. The swab thus made is placed in a test-tube, which is stoppered with cotton and the whole sterilized by heat before using. A large number of swabs prepared in this way are kept at hand in the hospital laboratory ready for use, and may be carried to and from the

wards without danger of contamination.

The culture medium used for growing discrete colonies of the organism from which to prepare pure cultures has been coagulated beef-blood serum, containing one part in four of one-per-cent. sugar bouillon (Löffler's mixture). The mixture of blood-serum and bouillon is coagulated in test-tubes by dry heat so as to form "slants," and then sterilized by steam in three successive days, as is done with ordinary media. On this culture medium the diphtheria bacilli grow vigor-

To obtain colonies of the bacillus from which to prepare pure cultures, some of the material secured on the swab in the manner above described, is applied over the surface of two or more tubes, and these are then placed in the incubator for development. After about eighteen to forty-eight hours, from the discrete colonies which have appeared, pure cultures may be made for inoculation. The cultures used and the methods employed in the inoculations have varied. With a few exceptions, which will be found duly noted in the detailed reports of the work, bouillon and agar cultures have been inoculated which have been about twenty-four hours in the incubator. In the majority of cases cultures in one-per-cent. grape-sugar bouillon of neutral to slightly alkaline reaction and colored with litmus, have been injected into the tissues of the abdominal wall in quantities less than one cubic centimetre by means of a hypodermatic syringe.

In the same-manner other fluid cultures and suspensions in sterilized water of the twenty-four hours' growth of agar cultures have been injected. method of direct inoculation from agar cultures by the platinum loop or wire through a wound on the abdominal wall has also been used in some instances. In order to avoid as much as possible any attenuation of the organism by cultivation, the cultures used for inoculation in the first mentioned series of 59 cases, have all, with few exceptions, been of the second gen-

eration from the patient.

The limitation of the cultures used in these cases for testing the virulence to those of the second generation, has greatly increased the necessary labor of the investigation, on account of the numerous failures to obtain pure cultures within so few generations. In the second series of 23 cases, however, the cultures used have not been so limited as to the number of generations. The usual number has been three; and, unless otherwise specified in the tables of results, the cultures used have been that number of generations from the patient. In both series of cases two animals, as a rule, have been inoculated from the same case, and in many cases with the same culture. Proceeding in the manuer above described, the study of two series of cases before mentioned has been carried out.

In the subjoined tables are given some of the details and the results of the work. In them are to be found the name and the age of the patient, the size and weight of the animals when known, the manner of inoculation, its results, and any remarks thought necessary. In addition to these, in the table of the second series, comprising those cases in which the bacillus has been present for a longer or shorter time, the number of days which have passed since it was first demonstrated to be present, up to the date of the taking of the cultures for inoculation, is given for each case in a separate column.

The first series of 59 cases has been divided into four groups comprising the fatal, severe, medium severe, and mild cases. In comparing and discussing the results obtained from the study of both series of cases, we shall consider as indicating the virulence of the organism derived from the case, only the shortest time in which an animal died in those cases where more than one was inoculated. The sooner that death followed the inoculation, the more virulent will be considered the culture which was inoculated.

In general it may be said that a full virulent culture

three days or less, a culture of medium virulence one which causes the death of the animal in from three to five days. Cultures which only produce local necrosis and ulceration or death after a greater number of days may be considered as of slight virulence. The death of the animal within forty-eight hours or less after the inoculation, indicates a very high degree of virulence in the culture inoculated.

This is based upon the assumption which nearly all writers on experimental diphtheria seem to have adopted, namely, that the susceptibility of the guineapig to infection with the bacillus diphtherize is a nearly constant quantity. If this be true, and if the rapidity of the death of the animal be a measure of the degree of virulence of the organism, we should find that the two or more animals inoculated simultaneously in the abdominal wall with the bacilli from a given case would die very nearly at the same time. In many cases this has been observed, but a glance at the tabulated results will show in this and other instances considerable variation in the times of the survival of animals inoculated from the same case as well as from similar cases; so that we are inclined to doubt the entire correctness of the assumption of a constant susceptibility.

These variations are apparently more frequent in those cases in which different modes of inoculation have been used than in those in which both animals have been inoculated from the same culture and in the same manuer, but this circumstance does not suffice to explain all the differences in results observed.

To account for these differences, it does not seem unreasonable to suppose that guinea-pigs vary in their degree of susceptibility to this infection, and this variation in susceptibility may be considered as playing a considerable part in the production of the irregularities in the effects of the inoculation.

It would appear, however, that in general, inoculation with bouillon cultures is more rapidly fatal than the inoculation of the growth from agar cultures. The observations on this point are not altogether satisfactory, for it is very probable that in some few cases confusion has arisen as to which animal was in-. oculated with the bouillon culture and which from the agar, but the evidence is on the whole sufficiently trustworthy to warrant the general statement. The difference between the forms of culture is especially apparent in those cases in which the animal, after recovery from an inoculation with an agar culture, has rapidly succumbed to a bouillon culture of the same origin as the first, notwith tanding the fact that the organism had been in cultivation for a considerable time and so subject to the chances of attenuation.

It is not probable that this greater virulence of the bouillon culture is due to an intoxication with the poisonous products of the bacillus preformed in the culture and in solution. That in cultures so young as those here employed and injected in the quantities noted, no effective amount of the poison of diphtheria exists is clearly shown by the results of those who have studied the toxalbumin of the bacillus diphtheriæ.

To determine for ourselves, however, whether the fluid of twenty-four-hour bouillon cultures contains any toxic substance, we have in several instances injected the sterile filtrates of such cultures in the same manner as for bouillon cultures and in greater quantities, but never with any noticable effect on the animal. of these experiments were essentially as follows: Twois one which causes the death of a guinea-pig within tenths of a cubic centimetre of a twenty-four hour sugar

INOCULATIONS WITH THE BACILLUS DIPHTHERIÆ.

FATAL CASES.

Name.	Age.	Weight (grms) or size of guin. pigs.	Mode of Inoculation.	Result of Inoculation.	Remarks.
т. м.	6 years	285 250	.3 c. c. Sugar bouillon (litmus)	Death, 41 days " 36 hours	
C . C.	10 years	200 290	.2 c. c. Sugar bouillon (litmus)	Death, 7½ days Paralysis. Killed after 3 wks.	
J. M.	3 уеагв	200 370	.2 c. c. Sugar bouillon (litmus)	Death, 31 days 48 hours	
H. W.	2 years	300 220	.5 c. c. Sugar bouillon (litmus)	Death, 48 hours Recovered	
L. C.	13 years	330 220	.5 c. c Sugar bouillon (litmus)	Death, 48 hours 48 hours	
C. K.	11 years	290 290	.3 c. c. Sugar bouillon (litmus)	Death, 36 hours " 36 hours	
R. T.	24 years	270 275	.2 c. c. Sugar bouillon (litmus)	Death, 36 hours " 36 hours	
E. K.	2½ years	340 275	.5 c. c. Sugar bouillon (litmus)	Death, 48 hours " 48 hours	Messles coincident.
K B.	3 years	270 230	.3 c.c. Sugar bouillon (litmus)	Death, 36 hours " 36 hours	
.J. T.	8 years	240 240	.2 c. c. Sugar bouillon (litmus)	Recovered. Ulceration Death, 36 hours	Bacillus under cultivation more than 4 weeks when inoc
M. L.	4 years	240	.2 c. c. Sugar bouillon (litmus)	Death, 36 hours	lated into second guinea-pig.
B. L.	S yrs. 3 mos.	215 360	.2 c. c. Sugar bouillon (litmus)	Recovered	Scarlet fever coincident.
R. R.	5 years	Small Very large	1. c. c. Sugar bouillon (litmus)	Death, 72 hours " 72 hours	Scarlet fever coincident.
M. D.	2 years	Small Large	.5 c. c. Sugar bouillon (litmus)	Death, 4 days " 4½ days	Scarlet fever coincident.
P. D.	4 years	Small Large	.5 c. c. Sugar bouillon (litmus)	Death, 36 hours " 72 hours	
G. B.	9 years	Medium size Medium size	1. c. c. Glycerine bouillon 1. """	Death, 36 hours " 36 hours	
A. G.	2 years	Medium size Medium size	1, c. c. Glycerine bouillon 1.	Death, 48 hours . " 4½ days	
L. G	7 years	280	.25 c. c. Sugar bouillon (litmus)	Death, 72 hours	Culture from membrane ca of traches and bronchi.
м. с.	4 years	Well grown	1. c. c. Glycerine bouillon	Death, 36 hours	Culture from tracheal pseud membrane.
в. н.	8½ years	Large Small	Agar culture loop 1. c. c. Sugar bouillon (litmus)	Death, 36 hours " 36 hours	
T. K.	4 years	Large Small	Agar culture loop 1. c. c. Sugar bouillon (litmus)	Death, 3½ days " 36 hours	
E. B.	1 yr. 10 mos.	Small Medium size	1. c. c. Sugar bouillon (litmus) Agar culture loop	Death, 24 hours " 36 hours	
A. R.	2⅓ years		.5 c. c. Water susp. agar cult. Agar culture loop .5 c. c. Water susp. agar cult.	Death, 48 hours " 3½ days " 36 hours " 36 hours	Two agar cultures used.
E. H.	3 yrs. 5 mos.	ł	.5 c. c. Water susp. agar cult.	Death, 3½ days "6 days	
E. F.	7 years	Reinoculation	.5 c. c. Water susp. agar cult. .5 """"""" 1. cc. (?) Glycerine bouillon	Death, 13–14 days Recovered and reinoculated Survived. Reinoculation	
J. R.	3 уелгя		.5 c. c. Water susp. agar cult.	Death, 4 days Killed after 10 days	
E. R.	13 months	Large Reinoculation	.5 c. c. Water susp. agar cult. .5 1. c. c. Glycerine bouillon	Death, 84 days Recovered. Reinoculated Death, 48 hours	The bacillus had been in c tures about 6 weeks when inoculated.
В. М.	21 years	275 290	.2 c. c. Sugar bouillon (litmus)	Death, 36 hours	Pneumonia.

bouillon culture two generations removed from the case of diphtheria, was injected in the usual manner into a guinea pig to test the virulence. At the same time a portion of the culture was filtered through unglazed porcelain, and nine-tenths of a cubic centimetre of the sterile filtrate injected into another guinea-pig in the same way as the bouillon culture. Likewise the culture from another case of diphtheria was tested and the filtrate injected, but in this second case the quantity of filtrate injected into the abdominal wall was one cubic centimetre, and an additional cubic centimetre was thrown into the peritoneal cavity. Both of the animals inoculated with the bouillon cultures died within thirty-six hours, while those in which the filtrate had been injected in comparatively large quantities showed no ill effects.

It is clearly evident, therefore, that the toxic effects of the bouillon cultures here used have little to do with their apparently greater activity. Furthermore, as to whether a more rapid death follows the injection of a larger than a smaller quantity of the same culture, we do not care to express a positive opinion from the data at hand, for it is uncertain in some cases which animal received the larger quantity. It may be said, however, considering the results of inoculation of bouillon cultures as a whole, that two-tenths of a cubic centimetre seems to be quite as effective as one cubic centimetre.

The results of the study of the 59 cases of the first series may be briefly summarized as follows, if we apply the criteria of virulence above alluded to:

Of this number 28 were fatal and 31 ended in re-

Of the 28 fatal cases, cultures from 22, or 79 per cent., caused the death of at least one animal within three days, while of the 31 non-fatal cases, those of 23, or 74 per cent., had this effect. What may be considered as full virulent cultures were therefore only a little less frequently found among the non-fatal cases than among the fatal cases.

Of the 40 fatal cases of Roux and Yersin all, or 100 per cent., killed the animal within four days. Comparing our 28 fatal cases with these, we find that 25, or 89 per cent., of the cases gave cultures of this The difference, therefore, bedegree of virulence. tween the fatal cases of Roux and Yersin and the similar cases of our series is represented by 100 per cent. in the former and 89 per cent. in the latter, of fairly Of the 39 non-fatal cases of the virulent organisms. above-named writers, 17, or 44 per cent., killed the animal in less than three days, while in our 31 cases, 23, or 74 per cent., had that result.

It cannot be said, therefore, that our results are completely in harmony with the classic studies of Roux and Yersin on diphtheria.

We may also combine the different groups of our first series in other ways, and institute comparisons. Comparing the fatal and severe cases together, on the one hand, with the mild and medium severe cases combined, on the other hand, we find that of the 36 fatal and severe cases, 28, or 78 per cent., killed a guineapig within three days, while of the 23 cases of mild and medium severity, 17, or 74 per cent., did so. The relation of the two combinations as to the frequency with which full virulent bacilli are found among them may therefore be expressed by the numbers 78 and 74, apparently indicating that full virulent cultures are not more frequently obtained from fatal and severe respectively 33 and 39 days before the taking of the

cases than from the others. Again, considering the mild cases by themselves, it is found that 7 of the 11, or 64 per cent., as compared with 79 per cent. of the fatal cases, or 78 per cent. of the fatal and severe cases combined, gave cultures which caused the death of the animal within three days, and were therefore full virulent.

In making these comparisons between the different classes of cases, we have of course based them upon the percentage among them of what may be considered as quite virulent organisms and have not considered the cases which have yielded cultures of medium or slight virulence. It has been thought best to limit the comparisons to this point in order to avoid confu-

The study of the second series of 23 cases, in which the bacilli have been present for from 8 to 51 days in the throat or nose, has been rendered possible by the rule of the Boston City Hospital, that no diphtheria case can be discharged until cultures from the throat and nose show the absence of Klebs-Löffler bacilli, although the case be otherwise fully recovered. By consulting the records of the routine bacteriological work on diphtheria carried on in the pathological laboratory in the same institution, we have been enabled to give in all of the cases, except one, the number of days which have passed from the date of the first demonstration of the organism by cultures in the throat or nose to the date of the taking of the culture for inoculation.

In the table of the results of our study of this series, the culture used is to be considered as of the third generation from the case, unless otherwise stated. These cases, moreover, unless otherwise specified, have been of mild character originally. The result of the work of this series may be briefly summarized as follows: Of the 23 cases, cultures from 11 have caused the death of the guinea-pig in less than three days, or 48 per cent. gave full virulent bacilli. It is interesting to note that in 7 of the 11 virulent cases the presence of the bacilli in the throat or nose had first been shown by cultures 26 to 51 days before the time that the culture inoculated was taken.

It will be seen, however, that this series, considered as a whole, shows fewer virulent cultures than the other series of 59 cases, the percentage in these persistent cases being 48 per cent. as compared with the 78 per cent. of the fatal and severe cases or the 74 per cent. of the mild and medium cases.

Whether these differences are due to any attenuation of the organism in this second series of cases, owing to the slightly greater number of generations through which it has been cultivated, we do not know. It seems, however, to be a generally accepted fact that the bacillus diphtheriæ is not easily attenuated by cultivation; and the general tendency of our own experience is in this direction, as will be seen from the results in some of the instances before alluded to, in which reinoculations of an animal have been made with a fresh culture of the same bacillus as the first inoculation. In some of these instances the organism has proven virulent although it had been under cultivation for some time. It may be mentioned that among the series of persistent cases are four cases, the bacilli from which had previously been inoculated and the results included in the first series. In two of these four cases the culture had been taken for inoculation culture of the present series. Both the earlier and later cultures in these two cases killed at least one animal in forty-eight hours, one of them with the later culture causing the death of the guinea-pig in thirty-six Of the other two cases of the four above mentioned, one seemed to show some diminution in the virulence of the bacillus, while the fourth case on both occasions seemed to yield organisms of little virulence.

If the results of this study of the cases of the second series be compared with those of Roux and Yersin and of Tobiesen on the same class of cases, they will be found to be totally at variance with those of the former, but to agree fairly well with those of the last mentioned. Tobiesen 12 obtained from 16 out of 19 convalescent cases cultures which caused the death of guinea-pigs with characteristic lesions, while Roux and Yersin 1 found that in similar cases the occurrence of virulent bacilli was the exception, and believed that a progressive attenuation of virulence took place.

Considering now the whole number of 82 cases in both series, we find that but one case seemed to furnish organisms of complete innocuousness toward guineapigs. This case was a fatal one, and in neither of the two animals inoculated was any effect noted. There are, however, 12 cases which deserve special attention, as the bacilli from them showed little virulence. In 2 of these cases the animal developed a characteristic induration and ulceration at the seat of inoculation. One was purposely killed, the other survived. In 6 others of these cases the animals died from 41 to about 54 days after inoculation, with very slight lesions (or none at all) observed at the autopsy. Cultures from the seat of inoculation were made at 5 of the autopsies, but in only one of them was the Klebs-Löffler bacillus recovered. This animal had been inoculated about 38 days before. In the remaining 4 cases the animals died in from 14 to 311 days with lesions of experimental diphtheria, and the bacilli were removed from the seat of inoculation. Of one of these 4 cases it should be explained that lesions were present in one of the animals inoculated, but not in the other or only in slight degree, and that the bacilli were found at the seat of inoculation in the latter, but not in the former. The case has, therefore, been considered as one in which lesions were produced, and in which the bacilli were recovered from the seat of inoculation.

It may be seen from this description that of these 12 cases with bacilli of little virulence, 6 yielded bacilli which called forth more or less of a characteristic reaction in the animals, either locally or in the organs.

Finally, we may state that, with the exception of these 12 cases, from all of the remaining cases bacilli were obtained which killed at least one guinea-pig within ten days.

From our study of these 82 cases the following general statements may be made:

(1) That there is practically no difference in virulence to be observed between the bacilli derived from severe and mild cases of diphtheria.

(2) That cases in which the Klebs-Löffler bacilli have been present for a longer or shorter period of time, furnish fewer virulent cultures than cases of recent beginning.

(3) That the Klebs-Löffler bacillus does not, as a rule, lose its virulence by long-continued residence in the pharynx and air-passages.

degress of virulence down to innocuousness, as far as is shown by the results of its inoculation into guineapigs, and that the intensity of the reaction in the animal bears no constant relation to the symptoms presented by the case from which it was derived.

(5) That there is no relation to be observed between the age or sex of the patient and the virulence

of the bacillus.

In conclusion, the writer desires to express his acknowledgments to Dr. Francis H. Williams for valuable clinical data on some of the cases. The thanks of the writer are also due to Dr. W. H. Prescott for kind assistance in this and other portions of

II.

The results of fourteen autopsies on diphtheria cases.

The autopsies on cases of diphtheria which are here reported have been performed, unless otherwise specified, at the Boston City Hospital during the period extending from November, 1893, to May, 1894. The chief interest in this work attaches to the results of the bacteriological examination of the organs.

Up to the time of the well-known work of Frosch 16 it was generally believed that the bacillus diphtheriæ never invaded the internal viscera, but was only to be found in the local inflammatory lesions. In 10 or 15 autopsies on this disease, this investigator, by using large amounts of material for each culture, could demonstrate the presence of the bacillus either in the blood or in some of the organs. One of the most frequent places in which it was found was in the pneumonic areas of the lungs. Previous to the work of Frosch but a very few instances are on record in which the Klebs-Löffler bacillus has been met with in these situations. One of these is its occurrence in the spleen in a case reported by Kolisko and Paltauf.16 In the cervical lymph-glands the bacillus has been observed by Schmorl in 7 out of 10 cases. Recently, Booker 86 obtained it in cultures from the spleen, submaxillary gland, lung, and blood of heart in a case of diphtheria.

In the broncho-pneumonia of diphtheria it seems to have escaped observation entirely in spite of the great amount of work which has been done on the bacteriology of this frequent complication of the disease, until Johnston 18 found in it a single case, and Strelitz 19 in one case among eight autopsies on diphtheria. In addition to these cases and those reported by Frosch, it has also been observed by Flexner 20 in one of the two cases examined by him.

It is apparent, therefore, that the principal points to be considered in these autopsies are the occurrence of the organism in the viscera in general and in the broucho-pneumonias in particular.

METHODS.

The medium generally employed for cultures at the autopsy has been the coagulated blood serum described in the first section of this report. The cultures were, in general, made by spreading over the surface of this coagulated serum in test-tubes as large an amount of the tissue or fluid as would adhere to the end of a piece of coarse, flattened platinum wire, previously sterilized in the flame of a Bunsen burner. The Klebs-Löffler bacilli are usually present in very small numbers in the organs, and we are inclined to attribute the (4) That the Klebs-Löffler bacillus exists with all comparative frequency with which we have met them

both to the use of the culture medium above mentioned, upon which they grow much more vigorously than upon the ordinary glycerine agar or similar material, and to the large amount of the fluid or tissue spread over the culture media. In the detailed reports of the results of the study of these cases which will be found below, it has been thought sufficient to only indicate the lesions presented at each autopsy by giving the anatomical diagnosis and any necessary remarks. In the bacteriological diagnosis of the cases the presence of the four organisms, the Klebs-Löffler bacillus, the streptococcus pyogenes, the pneumococcus (diplococcus lanceolatus) and the staphylococcus pyogenes aureus are in general the only organisms which have been considered. Other bacteria, including the bacillus coli communis, have developed in the cultures more or less frequently; but we have devoted little attention to

AUTOPSY I. By Dr. Wright. Fred W., aged eight years. Clinical diagnosis, scarlet fever. No bacteriological examination of throat during life, as there was no evidence of diphtheria.

Anatomical diagnosis: Inflammation of pharynx, larynx and trachea with muco-purulent exudation; slight ulceration of epiglottis; broncho-pneumonia; congestion and edema of lungs; acute splenic tumor; acute parenchymatous degeneration of liver and kidneys; acute lymphadenitis.

Bacteriological diagnosis by cultures: Klebs-Löffler bacilli in exudation of pharynx and ulcer of epiglottis; a culture from one lung contained a few Klebs-Löffler bacilli, also streptococci; pneumococci (diplococcus lanceolatus), staphylococci (aureus), and other organisms; cultures from spleen, kidney, liver, mesenteric gland and blood of heart were negative.

Two guinea-pigs were inoculated with .2 c. c. each of a twenty-four-hour bouillon culture of the third generation of the Klebs-Löffler bacilli from the pharynx. Both died in thirty-six hours, with the characteristic lesions at the autopsy. The bacilli were recovered by culture from the seat of inoculation in each animal, but from none of the organs.

A culture of the Klebs-Löffler bacilli found in the lung (sixth generation) was similarly inoculated into another guinea-pig in the quantity of .2 c. c. Death in seventy-two hours, with the characteristic lesions. Klebs-Löffler bacilli recovered by culture from seat of inoculation. Organs sterile.

This case is of interest as affording an instance of a fatal diphtheria without the presence of pseudomembrane.

AUTOPSY II. By Dr. Councilman. Isabella N., aged nineteen. Clinical diagnosis, typhoid fever and diphtheria. This case has been more fully reported by Dr. Morse in the reports of the Boston City Hospital.

Anatomical diagnosis: Diphtheritic inflammation of pharynx; diphtheritic ulceration of tonsil and larynx; tracheitis; typhoid ulceration of ilium and colon; heart thrombus; renal infarction; broncho-pneumonia, congestion, edema and bronchitis of lung; acute splenic tumor; acute lymphadenitis.

Bacteriological diagnosis by cultures: Klebs-Löffler bacilli and streptococci in tonsil and trachea. Typhoid bacilli and streptococci in heart thrombus, kidney infarction, liver and kidney. Typhoid bacilli in spleen and in gall-bladder. Streptococci in pleura and lung. Bacillus coli communis in mesenteric gland. Cultures from blood of heart and tracheal lymph-gland negative.

The Klebs-Löffler bacilli from the trachea were inoculated into two guinea-pigs. One of the animals died in forty-eight hours, and exhibited the characteristic lesions of experimental diphtheria at the autopsy; .5 to .7 c. c. of a twenty-four-hour bouillon culture was used for the inoculation of this animal. The other animal recovered, having been inoculated from a culture on agar.

This case is an example of poly-infection with the Klebs-Löffler bacilli, the streptococcus pyogenes and the typhoid bacillus. The last-named organism was distinguished from the bacillus coli communis by not producing gas bubbles in solid media, by having no effect on litmus milk and by not growing visibly on potato; also by the fact that it was actively motile and grew characteristically on gelatine.

It should be stated, however, that in the case of the kidney infarction the typhoid bacilli did not satisfy the requirements as to the culture on litmus milk.

AUTOPSY III. By Dr. Stokes. Sylvester P., aged ten months.

Anatomical diagnosis: fibrinous exudation on epiglottis; acute laryngitis; broncho-pneumonia of both lungs; acute lymphadenitis of cervical, bronchial and mesenteric glands; acute parenchymatous degeneration of liver and kidneys; acute splenic tumor.

Bacteriological diagnosis: Klebs-Löffler bacilli and streptococci in larynx, cervical lymph-gland and lung. Streptococci in heart blood, spleen and bronchial lymph-gland. Streptococci and bacillus coli communis in kidney. Cultures from the liver and mesenteric lymph-gland negative.

With an agar culture of the Klebs-Löffler bacilli from the cervical lymph-gland two guinea-pigs were inoculated. One of the animals died in forty-eight hours with the characteristic lesions. At the autopsy of the animal, cultures were made as usual from the seat of inoculation and the organs. In the culture from the kidney one colony of Klebs-Löffler bacilli developed, and in the culture from the seat of inoculation the colonies of the organisms were numerous.

This case is an example of the frequent association which has been observed of a streptococcus septicemia along with the infection with the Klebs-Löffler bacillus.

AUTOPSY IV. By Dr. Wright. Edith T., aged four years, three months.

Anatomical diagnosis: diphtheritic inflammation of pharynx and larynx, acute lymphadenitis, acute splenic tumor, ecchymoses in right lung and in mucous membrane of stomach.

Bacteriological diagnosis by cultures: Klebs-Löffler bacilli in pharynx, tonsil and epiglottis. Klebs Löffler bacilli and streptococci in right lung and in mucous membrane of stomach. Kidney, spleen, liver, right ventricle of heart, tracheal and mesenteric lymph-glands all sterile.

A guinea-pig, weight 210 gms. received .2 c. c. subcutaneously of a twenty-four-hour bouillon culture of the Klebs-Löffler bacilli from the lung. Death in forty-eight hours with the characteristic lesions, and the bacillus was recovered from the seat of inoculation, but found nowhere else.

The finding of Klebs Löffler bacilli in the stomach has been reported by Löffler ²¹ in a single case. In his case a diphtheritic inflammation of the stomach was observed, which was not apparent in the one here reported.

Fred B., aged AUTOPSY V. By Dr. Councilman. four years.

Anatomical diagnosis: Diphtheria and septicemia; erythema of skin; diphtheritic inflammation of pendulous palate and tonsils; acute lymphadenitis, with necrotic foci in cervical lymph-glands; edema of posterior tracheal tissues; acute nephritis.

Bacteriological diagnosis by cultures: Klebs-Löffler bacilli and streptococci in spleen, liver and cervical lymph-glands. Streptococci in kidney and blood of heart.

A guinea-pig weighing 210 gms. received subcutaneously .2 c. c. of a twenty-four-hour bouillon culture of the Klebs-Löffler bacillus found in the lung. Death in thirty-six hours with the usual lesions. In addition to being recovered from the seat of inoculation, the bacilli were also found in the cultures made from the blood, liver and spleen of the animal. The kidney was negative.

AUTOPSY VI. By Dr. Wright. Beatrice B., aged nine years.

Anatomical diagnosis: Diphtheritic inflammation of pharynx, tonsils, epiglottis and larynx; tracheitis; broncho-pneumonia of both lungs; acute lymphadenitis; acute splenic tumor; arterio-sclerosis of beginning of ascending aorta.

Bacteriological diagnosis: Klebs-Löffler bacilli in larynx, tonsil and lung; spleen, liver, kidney, heartblood and mesenteric lymph-gland negative for either Klebs-Löffler bacilli or streptococci.

A twenty-four-hour bouillon culture of the bacillus from the tonsil and also from the lung killed two guinea-pigs in thirty-six hours, with the usual lesions. The quantity injected in each case was .2 c. c.

AUTOPSY VII. By Dr. Councilman. Charles Van

G., aged three years.

Anatomical diagnosis: Diphtheritic inflammation of mucous membrane of nose and pharynx; slight broncho-pneumonia in both lungs; excoriations on face and nose.

Bacteriological diagnosis by cultures: Klebs-Löffler bacilli and streptococci in pharynx, nasal cavity and lung. Streptococci in blood of heart, in liver and in spleen. Kidney and cervical lymph-gland sterile. In mesenteric gland Klebs-Löffler bacilli. The culture from the excoriation on face showed the presence of Klebs-Löffler bacilli, and that from the nose Klebs-Löffler bacilli and streptococci.

AUTOPSY VIII. By Dr. Councilman Child. Fe-

Anatomical diagnosis: Operation wound of hip; abscess about hip-joint, involving ilium and retroperitoneal tissues; metastatic abscesses in kidney, lungs and left shoulder; diphtheritic inflammation of larynx, with necrosis and erosion of epiglottis; broncho-pneumonia and brouchitis.

Bacteriological diagnosis by cultures: Staphylococcus aureus in primary abscess, kidney, spleen and liver. Klebs-Löffler bacilli and staphylococcus pyogenes aureus in cultures from tonsil, epiglottis and lung (areas of broncho-pneumonia).

AUTOPSY 1X. By Dr. Wright. Irene T., colored, aged one year. In contagious wards more than two Klebs-Löffler bacilli in cultures made from months. nose during seven or eight weeks. Never found in Vide first case in the second series throat during life. of preceding section.

ation of epiglottis and larynx; diphtheritic inflammation of inferior turbinate bones and usual cavities with fibrinous exudation; infarction of lung; acute degeneration of liver and kidneys; acute lymphadenitis; acute splenic tumor; slight pericardial effusion; otitis media and abscess of both mastoid bones.

Bacteriological diagnosis by cultures: Klebs-Löffler bacilli in ulcer of larynx and epiglottis and in bronchial lymph-gland. In lung infarction fairly numerous Klebs-Löffler bacilli and other bacteria. Streptococci in liver and spleen. Pneumococci in kidney (diplococcus lanceolatus). In blood of heart a few bacilli (coli communis?). Klebs-Löffler bacilli and streptococci in pus of mastoid abscess.

This case will again be referred to in a following section.

By Dr. Councilman. Charles R., AUTOPSY X. aged four years.

Anatomical diagnosis: Diphtheritic ulceration of pharynx and larynx; edema of pharynx; tracheitis; bronchitis; extensive broncho pneumonia of right lung; erythema of skin; purulent conjunctivitis and keratitis.

Bacteriological diagnosis by cultures: Epiglottis, Klebs-Löffler bacilli and streptococci. Conjunctival pus, Klebs-Löffler bacilli and other bacteria. Lung, Klebs-Löffler bacilli, streptococci, pneumococci and other organisms. Edematous tissue with necrotic foci, behind left tonsil, streptococci. Kidney, streptococci, one colony; two to three colonies of staphylococcus aureus and other organisms. Spleen, very numerous colonies of various organisms, among them pneumococci.

AUTOPSY XI. By Dr. Councilman. Thomas M., Vide list of fatal cases, Section 1. aged six years. The bacilli taken from the throat during life were found virulent. This case will be referred to in another section.

Anatomical diagnosis: Diphtheritic inflammation of tonsils; diphtheritic inflammation and ulceration of trachea; broncho-pneumonia and edema of both lungs; acute parenchymatous degeneration; acute lymphadenitis; paronychia of toe.

Bacteriological diagnosis by cultures: In tonsil, trachea and bronchial lymph-gland, Klebs-Löffler bacilli, streptococci and staphylococcus pyogenes aureus. In lungs, Klebs-Löffler bacilli, streptococci, pneumococci,

and in one lung also staphylococci pyogenes aureus. In liver, Klebs-Löffler bacilli and streptococci. Streptococci in blood of heart and liver. Klebe-Löffler bacilli and staphylococcus pyogenes aureus in pus from paronychia. Right kidney, spleen and tracheal lymphgland sterile; left kidney a very few colonies of the bacillus coli communis.

A guinea-pig weighing 200 gms. was inoculated with .2 c. c. of a twenty-four-hour bouillon culture of the Klebs-Löffler bacilli from the bronchial lymph-gland. No reaction was noted in the animal.

This case is noteworthy as being a fatal diphtheria in which a non-virulent organism was found at the autopsy while the Klebs-Löffler bacilli found during life were virulent.

AUTOPSY XII. By Dr. Wright. Annie O'T., aged one year.

Anatomical diagnosis: Diphtheritic inflammation of pharynx, larynx and trachea; broncho-pneumonia; ulceration of base of tongue; necrosis and ulceration of epiglottis; acute lymphadenitis; acute splenic tumor.

Bacteriological diagnosis by cultures: Klebs-Löffler Anatomical diagnosis: Extensive diphtheritic ulcer | bacilli in larynx, pharynx, bronchi of both lungs and in small superficial ulcer on left hand. Streptococci and Klebs-Löffler bacilli in cervical lymph-gland and in one lung. Streptococci in the other lung. Kidney, spleen, liver and blood of heart, sterile.

A guinea-pig weighing 280 gms. was inoculated with .3 c. c. of a twenty-four-hour bouillon culture of the bacilli from a bronchus. Death after six days. The organism was found by culture in the blood and spleen of the animal, in addition to being found at the seat of inoculation.

Another guinea-pig weighing 245 gms. received .2 c. c. of a twenty-four-hour bouillon culture of the bacilli found in the lung. The animal survived for thirty-six days, with an ulceration at the seat of inoculation. The bacilli were recovered by cultures from the ulcerated tissue, but from none of the organs.

AUTOPSY XIII. By Dr. Councilman. Edward B. Clinical diagnosis, scarlet fever. The case had been recently operated upon for congenital hernia before entry into hospital.

Anatomical diagnosis: Erythema of skin; operation wound in abdominal wall with abscess formation; diphtheritic ulceration of pharynx and larynx; bronchitis; broncho-pneumonia of both lungs; acute degeneration of parenchymatous organs.

Bacteriological diagnosis by cultures: Larynx and pharynx, Klebs-Löffler bacilli. In one of these cultures also streptococci. Kidney, numerous streptococci. Spleen, numerous Klebs-Löffler bacilli and a few streptococci. Other organisms present. Liver, a few streptococci.

AUTOPSY XIV. By Dr. Wright. Sarah F., aged

two and a half years.

Anatomical diagnosis: Diphtheritic inflammation of epiglottis, trachea and bronchi; pseudomembrane present in trachea about bifurcation and extending into bronchi; bronchitis; congestion of lungs; ecchymoses in mucous membrane of stomach; acute lymphadenitis; acute splenic tumor; acute parenchymatous degeneration; excoriations on leg and about anus and vulva.

Bacteriological diagnosis by cultures: Klebs-Löffler bacilli and staphylococcus pyogenes aureus in trachea, lung, liver, kidney, heart blood, and in excoriations on leg. In addition to these the lung culture contained a few streptococci and pneumococci (?); that of the liver, streptococci; and the kidney culture, pneumococci. The spleen was sterile. In culture from tracheal lymph-gland a few streptococci and one colony of Klebs-Löffler bacilli. In the culture from mesenteric lymph-gland a very few Klebs-Löffler bacilli and other organisms.

The important points in the foregoing may be briefly summed up as follows:

Of the 14 autopsies the Klebs Löffler bacillus has been found in the lung in 13 cases, in the liver in 3, in the spleen 2, in the cervical or bronchial lymph-glands in 5, in the kidney in 1, in the blood of heart in 1, and in the mesenteric lymph-glands in 2. It has been cultivated from the mucous membrane of the stomach in two instances and once from the edematous tissue behind the esophagus. In 7 of the 12 cases, or

nearly 60 per cent., there has been a streptococcus septicemia in addition to the diphtheritic infection.

This seems to be another confirmation of the view of Barbier 38 and others that there are two distinct

of Barbier 38 and others that there are two distinct kinds of diphtheria: one, the toxic form or a monoinfection with the Klebs-Löffler bacillus; the other a polyinfection with that organism and the streptococcus.

In two other cases there has also been a similar polyinfection in which the staphylococcus pyogenes aureus has taken the place of the streptococcus in the septicemia. One of these septicemias, however, might be considered as having an infection-atrium in an abscess about the hip-joint, and one of the streptococcus septicemias an infection-atrium in an operation wound for congenital hernia.

In addition to these there is one other case of polyinfection (Autopsy X), in which there seems to have been a general infection with several organisms; but, owing to the lack of cultures from the liver and heart blood, nothing very definite can be said about it.

Broncho-pneumonia was present in 10 of the 14 autopsies. The occurrence of the Klebs-Lößler bacillus in the lung seems to be independent of the coincidence of this lesion, for it has been absent in one broncho-pneumonia and yet present where no pneumonic condition was made out.

In fact, we are inclined to explain the frequent occurrence of the bacillus in the cultures from the lung in the cases to its being present in the smaller bronchi—an explanation which Strelitz has made use of in the case reported by him. The organism most frequently found associated with the Klebs-Löffler bacillus in the lungs has been the streptococcus. These two have been present together in 9 cases, in 7 of which there was a pneumonic condition. The streptococcus has also been noted in pure culture in one pneumonia.

The pneumococcus (diplococcus lanceolatus) has been found much less frequently, appearing in but 3 or probably 4 of the 10 cases of pneumonia, and then always along with the streptococcus and Klebs-Löffler bacillus.

The staphylococcus pyogenes aureus has been observed in four of the pneumonias, once with the Klebs-Löffler bacillus alone, and three times in company with all three of the above mentioned organisms.

(To be continued.)

"MENS SANA IN CORPORE SANO." 1

BY GEORGE F. KEENE, M.D.,

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"BRAIN is the organ of the mind." So said Hippocrates over two thousand years ago. So said Galen over six centuries after him. And as the Greek philosophers elaborated theories of mind and systems of philosophy, mental and moral, that have come down to us like their architecture, in ruins, yet simple, beautiful, grand, so did the great father of medicine determine and define the characteristics of a mind diseased. The soundness of the teachings of Hippocrates remain unshaken to-day, and bespeak an insight into the forms and phases of insanity centuries in advance of his Our earliest records show the history of lunacy to be coëval with the history of man. To the barbarian the temples of Saturn, and to the Greek the Asclepia, were the only asylums open to the deranged; there were received and there were treated, in a humane and salutary manner, those whom the gods made mad. The "mighty moon-struck hero Ajax," and Orestes, whom the Furies demanded, have been sung by the poets as examples of the mad men of mythology. It was David's harp that charmed away the evil spirits

¹ Read before the Providence Medical Association, June 4, 1894.

that pervaded Saul. It was David himself that played the mad man before Achish (1 Samuel, xxi, 13) and "scrabbled upon the doors of the gate, and let his spittle fall down upon his beard," showing a familiarity with one of the marked forms of insanity that could have come only from accurate observation. Mark how well the King of Babylon portrays the salient points of a mind destroyed when he "was driven from men, and did eat grass as oxen, and his body was wet with the dew of heaven, till his hairs were grown like eagle's feathers and bis nails like bird's claws." The ignorance and superstition of the Middle Ages shrouded the progress of the past; and from 1400 to 1700 A. D. the lunatic had transmigrated into the witch, the devil-possessed, so that exorcism, torture and the gibbet became the most approved methods of treatment for this fell disease. Then Salem in the New World became as famous as has "Bedlam" in the Old, for its treatment of those poor unfortunates to whom the heathen nations of old had opened the temples of their gods for shelter and for care. But ignorance has been dispelled, superstition has vanished, insanity has been divorced from the devil and has gained the attention of science and humanity.

To know what insanity is, it is necessary to know what insanity does, to see the lunatic at all times, to hear him as well as to learn his history. In short, to observe accurately and know intimately any person or thing is the foundation of a thorough comprehension of either. Insanity means unsoundness, and is applied usually to the mind. We must know then what soundness of mind is, symptomatically, to know what are the symptoms of mental unsoundness.

Mind is a congeries of phenomena which we call intellectual faculties. It is a composite whole; perceptions, conceptions, judgment, memory, emotions which move the will, and the will itself, the mover of the man, are but phenomena or functions of mind. Let any one of these become impaired, and the mind is unhealthy, reason is impaired. Destroy them all, reason is dethroned, man is indeed demented, and death comes not too quickly to disintegrate the whole. Insanity is a term applied to certain conditions of mind as manifested by certain trains of thought and significant actions, and has been accurately described by many, defined by none. In fact, a true definition of an indeterminate state is well-nigh impossible. We are familiar with those disturbed mental states that accompany bodily disease - the delirium of fever, the stupor of typhoid, the depression and pessimism of the dyspeptic and the exhibaration and excitement of the intoxicated. We know that certain substances are followed after their ingestion into the body by disturbance of the mind both immediate and remote; strictly speaking, such mental states, though transitory, are the same in kind as those more fixed disturbances which we call insanity. All diseases of the nervous system, whether primary or secondary, congenital or acquired, should, in the words of Griesinger, be regarded as one inseparable whole, of which the so-called mental diseases comprise only a moderate portion. But society compels us to draw an arbitrary line in the treatment, at least, of those more refined and functional states of the nervous organization which we are pleased to call hysteria, neurasthenia, nervous prostration, hypochondriasis, delirium and the like. Because insanity is not a simple condition, or disease if you will, but made manifest by is not beyond question, for it is well known that there a series of most varied symptoms, often combined in are certain somatic elements capable of producing

the same case or individual, often alternating or rotating, yet never exactly the same in two different individuals; because of this complexity of phenomena, there have been almost as many so-called definitions of insanity as there have been writers. As each new obstetrician, when he begins to feel that he is or must become an authority on labor, immediately sets about inventing forceps, so does every writer upon insanity invent his definition, until it has now become a significant fact that the most recent writers upon this subject do not attempt to give a definition of insanity. The reason that a short, sharp definition has been so vainly sought is because of man's responsibility to man; and the law has therefore stepped in and forced the physician to define that state, recognized as a pathological one, where the individual's responsibility to society has been repealed. All definitions have therefore two aspects, the analytic or the medical, and the descriptive or the legal; and yet perhaps some definitions have been evolved as much to conceal ignorance as to impart knowledge.

Shepard, an English author on lunacy, openly avowed his object to be to puzzle the lawyers, when he defined insanity as "a disease of the neurine bat-teries of the brain." On the other hand, mark the elaborateness of Spitzka, who says: "Insanity is either the inability of the individual to correctly register and reproduce impressions (and conceptions based on these) in sufficient number and intensity to serve as guides to actions in harmony with the individual's age, circumstances and surroundings, and to limit himself to the registration as subjective realities of impressions transmitted by the peripheral organs of sensation; or the failure to properly co-ordinate such impressions, and to thereon frame logical conclusions and actions, these inabilities and failures being in every instance considered as excluding the ordinary influences of sleep, trance, somnambulism, the common manifestations of the general neuroses, such as epilepsy, hysteria and chorea, of febrile delirium, coma, acute intoxications, intense mental preoccupation, and the ordinary immediate effects of nervous shock and injury." And the author prefaces this thus, "the following appears to the writer to comply with the chief requirements of a practical definition." Definition! why, it is a whole treatise on insanity, and is truly analytic. No one but a Whitney, however, would ever think of telling that to a jury. Yet it has its value to the student. The character of each definition depends upon the writer's standpoint, whether he considers insanity as a state or condition, a disease or symptom.

The lawyer's main purpose is to learn why A does not commit a crime de facto when he does identically the same thing as the criminal B. Sir James Stephen has therefore said: "No act is a crime if the person who does it is, at the time when it is done, prevented (a) from knowing the nature or quality of his act, (b) from knowing that the act is wrong, or (c) from controlling his own conduct, unless the absence of the power of control has been produced by his own default." This is a fair sample of a lawyer's definition. But although definitions are numberless and cumbersome, most writers agree on one point as the basis of their theses, namely, that disease of the brain is the vital characteristic of all insanity. That this is a fact

mental disturbances by their action upon the brain, independent of disease of that organ. A fair statement of insanity would be that it was a disturbance, somewhere in the body, interfering with clear perception, calm judgment, retentive memory, consistent feeling and normal volition.

The nervous system is primarily and essentially concerned in all insanity, either by being over-active, as in some of the sthenic forms, or dormant and exhausted, as in some of the asthenic forms. Again, the nervous system may have been congenitally defective, giving rise to a mental state known as amentia. The terminal stage of all insanities that are incurable is a degenerative one known as dementia. From the earliest times insanity has been divided into three forms, mania, melancholia and dementia. But at the present time these have been divided and subdivided and divided again until the student is bewildered on simply reading the classifications of different authors; for there is no universally accepted classification of mental diseases, and the same terms even are used by different writers to convey entirely different meanings. Some, as Morel, would classify according to causes; others, like Maudsley and Buknill, classify according to the functions interfered with; Voisin, according to the different morbid conditions of the brain; Clouston, according to the clinical history; Kraft-Ebing combines clinical history with morbid anatomy in his excellent classification. But upon a point where such authorities disagree the common mind could hardly help being confused till the conclusion forces itself upon us that as yet there can be no accurate scientific basis for the classification of insanity. Perhaps the first thing that leads the common mind to suspect that the mind of his fellow is unbalanced is peculiar beliefs or theories expressed either by words or actions, or in other words, delusions. These are so common in many forms of insanity that a determination of their character determines the form of insanity.

But what is the cause of this condition of mind? Is it organic disease of the brain, or organic disease of the body, or both? Or is it the result of a certain morbific entity acting within and upon the tissues, changing first their function, then their structure, and characterized by certain specific phenomena? We know that an unhealthy body often accompanies an unhealthy mind, either as an effect or a cause. also know that certain crises in the development of the individual are accompanied or ushered in by mental disease, for example, puberty and the climacteric. Again, certain physiological processes, when accompanied by pathological changes, are frequently terminated by insanity, as, for example, the pregnant and puerperal state. Again, we know that certain drugs have a distinct and a determinate effect upon the mental faculties, for example, alcohol, which makes a man assume nearly all the forms of insanity from mania to stupor. Hasheesh produces dementia. Bromide of potash will do the same. Then syphilis produces or is accompanied by a marked form of insanity. Malarial diseases are frequently followed by insanity. Clouston speaks of tuberculosis as a cause of insanity. Others classify some mental disturbances under the head of phthisical insanity, rheumatic insanity, gouty insanity, anemic insanity, and the like. But when the illustrious Virchow, by his writings and researches in pathology, hinted at the possible relation between then be the brain's Borgia? Do we not know that a mental phenomena and the retrograde metamorphosis failure to excrete these waste products has a marked

of brain tissue, there was a revolution among alienists, and all insanity was believed to be due to brain disease, denying that the mind had any power to injure itself. That there are organic diseases of the brain in many cases of mental disease is beyond dispute; but is there not a cause for this organic disease in the body many times outside of the brain itself? We know that alcohol perverts first the function of the nervous system; and, if long continued, we know, as surely, nervous tissue becomes disorganized.

The tendency nowadays, however, is not only to define insanity as a disease of the brain, but to locate the diseased portion of the brain. In short, an able writer on this disease starts off with this question, "What is that morbid condition which forms the basis of insanity, and what part of the brain does it affect?" He has evidently been a student of Ferrier and Gall. He has never associated the edemic limbs, the hectic flush, the sallow leaden skin, the wheezing lungs, with his insane patient's freuzied mind as a cause, but rather as the effect or concomitant of a spot somewhere in the frontal lobes or about the Rolandic fissure, the præ- and post-central gyri, or Broca's convolutions, which is the seat of disease. But to what convolution or fissure does alcohol repair, and hold its orgies? Where does syphilis find an asylum? And yet these agents are well-recognized causes of insanity. Or if organic disease of the brain is the cause of insunity, why does Spitzka give the percentage of recoveries as 80 per cent. for mania, 60 per cent. for melancholia, 90 per cent. for stuporous insanities? Surely, organic disease of the brain is very tractable, more so than that of the liver, heart, lungs or kidneys. Birdsall, in speaking of cerebral localization in insanity, says: "In no single part of the brain can you localize any of the complex functions by which a complete conception is formed, and yet the proposition is a true one that every cell and fibre in the brain has its distinct function. To produce insanity, then, you must have general derangement." And the most constant pathological symptom, when any is found, is merely atrophy of, not a part, but the whole cerebral cortex.

Ancient writers named one of our recognized forms of insanity melancholia or black bile. A clergyman once said, "You will see some men with long faces, measured steps, always self-abasing, never worthy to breathe, who call themselves pious; but this is not piety, it is biliousness." There is a condition of body which is represented by this indefinite, unscientific term. Are we so sure that there may not be a condition of mind arising from the same or similar causes? Indeed, Spitzka says, "There is no clinical difference between the condition of many dyspeptics, who never become maniacal, and some maniacs in the prodermal stage of their disorder." True, the ancients knew less about the liver than they did about insanity, when they named one of its forms black bile. But can we, in the fulness of our knowledge, say the liver has nothing to do with it? We think we have solved somewhat that ancient riddle, "What is the function of the liver?" We think that its functions are metabolic, that it is not only a blood-forming but a blooddestroying organ, that nitrogenous waste and the blood corpuscles (red) are destroyed there, and out of their ruins is built up urea, urine pigments, bile salts. In a word, it is a leucomaine factory; why may it not toxic effect upon the brain and nervous system, producing convulsions, coma and insanity? Why cannot the leucomaines act as destructively as alcohol? Would the dead brain cells identify their destroyer? Would a paretic dementia caused by alcohol be different from one produced by Bright's disease? Can we not look behind the diseased brain and see the poison at work in the one case as well as in the other? Had the scientific physician been satisfied with the germ theory, the history of the ptomaines would have been lost to us. Let us watch then the effect of other organs on the mind as well as the brain; let us not soar into imaginary realms, upborne by the pinions of seductive theory, whilst the tangible soma with its intricate recesses and complicated processes remains yet unexplored.

We are but on the threshold of a greater knowledge and greater benefits to be derived, both in mental as well as clinical medicine.

Each vitalized cell in the animal body, as a result of its own vitality, disintegrates and regenerates itself. This disintegration is death, this regeneration is life; and hence when we begin to live, we begin to die. Health is dependent upon the incessant formation, transformation and elimination of organic materials. "We constantly bear about within us the effete débris of our living selves." We are constantly burning; the fire must be fed, the gases carried off, the heat utilized, the ashes withdrawn. The liver and kidneys are our stokers; the lungs and skin our chimney; the intestines our ash-pit, the blood our forced draft. Comparatively recent research has discovered that there are present in the body, both as the result of ation, but that it nevertheless is based upon actual normal physiological action in health and of pathological (or bacteriological action, if you will) in disease, certain chemical compounds called alkaloids, which have been classified (according as they originate from germ action on dead albumins or cell activity in vital tissues) as ptomaines and leucomaines. Both are crystallizable and capable of forming salts, and both are more or less active poisons. The deadly bite of the cobra has been known for ages, and the scorpion and tarantula are shunned because of their poison; but the ptomaines of our own bodies have enjoyed the innocuous desuetude of blissful ignorance. How recently the Erlich test of typhoid has been presented to us, showing the formation in the intestines and excretion in the urine of a chemical substance recognized by certain reactions. Certain non-crystallizable nitrogenous substances which are elaborated in the animal economy and are more toxic than either ptomaines or leucomaines have been recently isolated, and for want of a better name have been called extractives, toxines, chemical X-Y-Z's. These substances are eliminated largely by the urine, and manfactured constantly in the intestinal canal. The urine has been most carefully investigated with regard to the character of its leucomaines and extractives, and experiment per-formed on lower animals show it to be highly poison-

Bouchard has determined a unit of poison, which he calls a toxic unit and defines as the amount of poison required to kill one kilogram of living matter. "The urotoxic is the quantity of urinary alkaloids capable of killing a rabbit weighing one kilogram." The urotoxic co-efficient in man is .465. In other words, for each kilogram of body weight enough poison is ex-

living matter; or in two days and four hours a man excretes enough poison to kill himself. These facts are of the most vital importance to the alienist. He may find, perhaps, in auto-intoxication a potent cause for many of the vagaries of a mind diseased; and perhaps, in time, heredity will be as much divorced from insanity, by the toxine, as it has been separated from phthisis by the bacillus of Koch.

So important has this toxic influence in disease become that "auto-intoxication in mental diseases" was one of the chief topics for discussion at the annual congress of French alienists held at La Rochelle last August: At that time Drs. E. Regis and A. Chevalier-Lavaure made a most masterly report. They distinguish three orders of clinical facts, and consider separately the mental disorders that develop as a result (1) of acute infectious diseases, (2) those due to visceral disturbances, (3) those of the diathetic maladies. We all know that typhoid and eruptive fevers, "grip," erysipelas, puerperal fever, etc., are oftentimes followed by the most marked insanities. Whence comes this, if not from toxines peculiar to the diseases? much more rational this than the theory of nervous shocks, whose influence must be transitory! The delirium of fever is surely the result of deficient excretion; once make this free, and delirium ceases, temperature falls. Drs. Regis and Chevalier-Lavaure ask in this connection, if infectious disorders are not sometimes the cause of general paralysis. And in this connection Dr. Alder Blumer, of Utica State Hospital, answers, "for my own part, I believe this opinion is not susceptible of any very great generalizfacts"; and he further states, "I have seen cases in my practice when, in making the diagnosis of general paralysis, I have based it mainly on the denutrition here referred to." With regard to visceral disturbances producing insanities, Blumer says: "Visceral disorders often also produce insanity. This is well known, and the earlier authors localized insanity in the liver and the bile. But the view according to which the insanity thus produced is the result of an auto-intoxication is altogther a recent one." The third group of Regis and Lavaure is auto-intoxication from diathetic maladies. With regard to this, Blumer says editorially: "From the evidence we are constrained to admit, the attacks of insanity concomitant with the diathetic aggravations seem to correspond with variations in the composition of the liquids of the organism, notably of the urine, in which the proportion of uric acid is markedly augmented." Again he says: "A powerful argument in favor of the origin of insanity by auto-intoxication is deduced from the fact that antiinfectious, antiseptic treatment, either general or local, has often given excellent results."

If this theory is true, then the treatment of insanity must be revolutionized; and the infection, the autointoxicant, must be combated and eliminated if we wish to eliminate the disease. How we can best do this is a problem yet to be solved. In this connection it may be of interest to mention the experiments of Dr. Carlo Sanquirico, of Sienna, performed on dogs and guinea-pigs in 1887, and published in detail in the Archivio per le Scienze Mediche, Vol. IX, No. 3. Two sets of animals were poisoned with the same doses of strychnine, chloral, alcohol, aconitine, paraldehyde, caffeine and urethan. Into one set was injected a creted in twenty four hours to kill 465 grammes of saline solution, in quantity amounting to 8 per cent.

of each animal's weight. The other set were untreated. The results were truly wonderful. The animals into which the saline solution was injected all survived, the others all died. From these facts we are forced to the irresistible conclusion that if vegetable alkaloids can be diluted and washed out of the system before their toxic effect is complete, why cannot animal alkaloids be treated in this way as well? The use of saline solations was first established as a substitute for intravenous transfusion of defibrinated blood, and was found to answer as well, and even better, for this purpose. Their use subcutaneously was the next step; and it was found that this method of introduction was fully as efficacious as the intravenous; in fact, it has many advantages over the former method, in at least having a less complicated technique and being a much safer procedure. Professor Sahli, of Berne, was one of the first to strongly advocate and accurately describe the subcutaneous injections of water in large quantities.

In the Medical Record for November 29th, is the following account: "The method consists in the subcutaneous injection of a sterilized, blood-warm, physiological saline solution (0.73% sol. NaCl) by means of a large Erlenmeyer's flask with an elastic tube, and a hollow needle as thick as a knitting-needle. As much as one quart of the solution can be easily injected in from five to fifteen minutes. If necessary, the procedure may be safely repeated four or five times per day. The best situation for the injection is the anterior abdominal wall. On each occasion the skin should previously be thoroughly washed with soap and corrosive sublimate, and the puncture subsequently sealed with aseptic cotton wool and collodion. Under such precautions not the slightest signs of any local reaction are ever observed.

We believe the first adaptation of this procedure to the treatment of cases of insanity was at the Rhode Island State Insane Asylum a short time ago. Ilberg and Lehman in Germany within the last year report several cases in which good results followed the hypodermic injection of 600 c. c. of saline solution in the fasting insane. But this procedure was adopted for the sole purpose of nutrition, and not for the treatment of the disease per se; and it was recommended instead of forced feeding. In Dr. Rohe's last report of the Maryland Hospital for the Insane, are six cases in which it is believed for the first time a nutritive salt solution has been used subcutaneously as a substitute for forced feeding. In these cases was used twelve to fourteen ounces of sterilized water to which, after partially cooling, were added the whites of two eggs and thirty grains of common salt.

The new departure to which I would call your attention, and in which we believed ourselves to be among the first in the field, if not the pioneer, is the use of the salt solution subcutaneously in large quantities (not less than two quarts daily) for the systematic treatment of those forms of insanity believed to be of somatic origin, or, in other words, due to auto-infection or intoxication. As yet we are treating but one lobe solidified, lower lobe normal. Abdomen: Liver case; but the improvement has been so marked that there is great ground for encouragement for the continuance of the treatment.

The patient is a single woman, thirty-three years of age, with but poor education and family history uncertain. Two years ago she began to be exceedingly religious, then taciturn and apathetic, lying in bed sometimes a week continuously. She refused to eat brought at once to the Army Medical Museum, which

much, and was much depressed for two years. Of late she has taken to wandering about and entertaining ideas of self-destruction. She first began to cause her friends anxiety about one year ago, by having grave delusions of depression, saying that she was totally lost, and moaning. She also had hypochondriacal delusions, thinking her blood was dried up. She was reticent, would not speak above a whisper, and appeared to be fast growing demented. Physical examination showed no marked signs of disease in any of the important organs. The reflexes were only sluggishly responsive; the pulse was slow and weak; the skin dry, and had a dehydrated, leathery appearance; while the whole body seemed in a state of complete atony. One quart of sterilized solution was introduced subcutaneously, morning and night, until fifteen quarts had been used. The improvement was marked and immediate; the depression has been markedly relieved. The urine was greatly increased; the skin became moist and supple; and the patient will now talk quite a little; while the delusions have become latent, and the recovery is at least promising, if not assured. The treatment has been temporarily suspended on account of slight edema of the pudenda being produced, but it will be resumed shortly.

One case, or part of a case, is of no significance in proving the efficacy of any form of treatment; and this case is only offered as a suggestion of what seems to be a promising and as yet unexplored field in the treatment of mental disease, and in harmony with the present and but newly evolved theory of auto-intoxication as a cause of insanity.

Clinical Department.

A BRIEF CONTRIBUTION TO THE IDENTIFI-CATION OF STREPTOCOCCUS PYOGENES WITH STREPTOCOCCUS ERYSIPELATOS.

> BY WALTER REED, M.D., Surgeon, United States Army.

THE following case appears to be of sufficient interest to justify publication. I am indebted to Dr. D. S. Lamb, of the Army Medical Museum, for a few brief notes of the clinical history and autopsy:

J. Mc-, male, negro, aged fifty-four, was admitted to the Freedman's Hospital, Washington, D. C., February 2, 1894. Patient was able to be up and about the ward until April 7, 1894, at which time he was confined to his bed, having a slight cough and some fever; no temperature record was kept in his case. Patient, who had been under treatment for chronic disease of the liver, died April 12, 1894.

Autopsy, 10 A. M., April 13th. Abdomen very large and protuberant; syphilitic rupia on chest, abdomen and thighs; right inguinal hernia. Chest: Heart hypertrophied, weight 20 ounces; valves normal; right lung partly collapsed from pressure; left lung, upper greatly enlarged; upper and lower surfaces studded with many large, firm, whitish, in some instances unbilicated, nodules; firm adhesion to diaphragm and anterior abdominal wall; weight 291 pounds. Spleen firm, enlarged; weight 20 ounces. Stomach and intestines normal. Kidneys firm, enlarged.

The liver, heart, left lung and left kidney were

afforded the writer the opportunity of examining them and of taking bacteriological cultures.

The liver presented a most remarkable specimen of carcinoma of that organ, and was turned over to the anatomist of the museum for the purpose of making a plaster cast.

The pleura over upper lobe of left lung was dull, its surface being covered with a delicate layer of fibrin. Upon section the cut surface was uniformly grayish in color, and studded with numerous slightly projecting granulations. Cover-slips from this part of the lung showed abundant diplococci, many having distinct cap-

The kidney and spleen were good specimens of chronic passive congestion.

Cultures were taken on agar plates from the hepatized lobe of left lung, and from the spleen and kidney. A white mouse was inoculated with two loops of the exudation taken with all precautions from the upper lobe of the left lung. The mouse died at the end of forty hours. Cover-slips made from its blood, liver, spleen and kidney gave many diplococci with capsular staining; cultures from blood and organs, grown on agar plates, gave pure cultures of the diplococcus lanceolatus.

I did not have an opportunity of studying the agar plates made on April 13th, until the morning of the 16th of April. At this time all plates were found to contain numerous colonies. Plate No. 3, of each series, contained colonies sufficiently separated to enable cover-slips to be made and cultures to be taken. The result of this examination is as follows: The plates made from the hepatized lung gave two sets of colonies, namely, diplococcus lanceolatus and streptococcus pyogenes; while the plates from spleen and kidney gave only colonies of streptococcus pyogenes. agar the organism was composed mostly of short chains, while grown in flesh-peptone bouillon there were both long and short chains.

I should here state that Dr. Lamb, who made the autopsy, had, while removing the very large liver, sustained an abrasion of the skin over the left second metacarpo-phalangeal joint, and had taken no precautions towards avoiding any septic infection of the wound during the further progress of the autopsy.

During the forenoon of the 14th (twenty-four hours after the autopsy) Dr. Lamb began to experience a sense of languor, with chilliness, together with some tenderness in left axilla. During the afternoon a distinct chill occurred, followed by fever and headache, and increased tenderness in axilla. The site of inoculation was reddened, a little swollen, and there was a slight escape of pus.

15th, A. M. Condition better; a feeling of weakness, so that patient was disinclined to any exertion, although he was not confined to his bed. Distinct chill, P. M., followed by fever; temperature not recorded.

16th. Fever continuous. Temperature, A. M., 102° pulse 95. I saw the patient for the first time; the wound was dry and glazed over; very little swelling of the part; glands of left axilla slightly swollen, and tender on pressure, or on movement of the arm. Temperature, P. M., 103°, pulse 105.

17th. During the afternoon patient noticed that there was some swelling of the face on the right side, near the nose; 6 P. M., increase of fever and face more swollen.

side of face, the nose, and extending slightly on to the forehead. Temperature 104°, pulse 105.

The disease ran the usual course, spreading to the left side of the face as far as, and involving the ear; was of moderate severity, and lasted until the 22d, when it began to rapidly subside.

The important features of this case to which I would like to draw attention, are the following: The patient died of croupous pneumonia; bacteriological examination discovered that, in addition to a local infection of the lung with diplococcus lanceolatus, there was a general infection of the organs with streptococcus pyo-While the patient did not exhibit any symptom whatever of erysipelas during the course of the fatal pneumonia, the physician who performed the autopsy, accidentally infecting a fresh wound of his hand with the fluids of the cadaver, experienced a local infection, which was rapidly followed by a general infection of the system, the latter expressing itself in the form of well-marked facial erysipelas.

Dr. Lamb had never had a prior attack of erysipelas. The time that elapsed between the local infection and the development of the erysipelas was four days.

Bumm, in discussing the probable identity of streptococcus Fehleisen and streptococcus pyogenes, has expressed the opinion that a definite decision in this matter can only be arrived at by the opportune observation of cases occurring in human beings. It is with the object of placing on record such an opportune observation in man that I have desired to report the preceding case.

THE SUBCUTANEOUS INJECTION OF SALINE FLUID IN COLLAPSE FROM CHOLERA MOR-BUS.

BY HAROLD WILLIAMS, M.D.

I was called on the 31st of July by Dr. J. S. Grouard, of Nantucket, to see a patient in collapse from cholera morbus.

The history of the case was briefly as follows: Patient, fifty-six years old, male, after spending some months in the Adirondacks, where he was sent for threatening pulmonary tuberculosis, passed a week in New York City, and then came to Nantucket. He left New York in the intense heat, sat on the deck of the boat, became chilled, and had slight diarrhea. He arrived in Nantucket July 30th. That night the diar rhea became worse; he had cramp in the legs and abdomen, vomiting, and large watery dejections, and Dr. Grouard was called. When Dr. Grouard saw him, the cramp had become convulsive and the vomiting and purging very severe. In spite of the treatment, consisting of the subcutaneous injection of morphia sulphate, strychnia nitrate and brandy, the patient became rapidly worse; Dr. Grouard asked for a consultation, and I was called.

When I saw the patient at 12 m., four hours after the beginning of collapse, he was rapidly becoming moribund. The surface of the body was bathed in sweat, and cold; the nose was pointed; the face pinched and drawn; the legs mottled. Respiration was hardly perceptible, and no pulse could be detected in the radial brachial or femoral arteries. It was decided to give a large subcutaneous injection of the saline solution employed in collapse from hemorrhage.

18th, A. M. Well marked erysipelas, involving right ologie und Parasitenkunde, Band ii, 1887.

For this purpose a reversed aspirator was used and a quart of the solution, containing fifteen grains sodii bicarbonatis and half a drachm of sodii chloridi'at 105°, was slowly injected beneath the skin of the abdomen. The injection of this fluid was followed by immediate improvement. The radial pulse became distinctly evident; the respirations became more rapid and full; the surface of the body warmer. From this time there was progressive improvement; and at the present writing (six days afterwards) the patient is nearly well.

The collapse in this instance was more profound than I have ever seen followed by recovery, and I have no hesitation in recommending this method of treatment for similar cases.

Medical Progress.

RECENT PROGRESS IN DERMATOLOGY.

BY JOHN T. BOWEN, M.D. (Concluded from No. 13, p. 317.)

THE MANAGEMENT OF ECZEMA.4

In a paper read before the Dermatological Section of the British Medical Association, Malcolm Morris endeavors to present, in as summary a manner as possible, the results of his own experience in the treatment of eczema. With regard to internal medication his view is that, as a general rule, the less the better. If there be any constitutional affection or a pronounced neurotic element, appropriate remedies for these conditions are to be employed; but unless there are definite indications of this kind, internal medicines are not only useless, but positively injurious by disordering the digestion. In an ordinary chronic eczema, when the health does not appear to be affected, he relies entirely on local treatment. When the lesions are acutely inflammatory, he considers antimony of great value, beginning with 10 to 13 minims of the wine of antimony, repeating the dose in an hour, and if need be two hours later. The dose is then gradually reduced until six minims three times in twenty-four hours is reached. He considers that arterial tension is the indication for antimony, while depression is a positive contraindication. If there is a neurotic element in the case, sedatives and nerve tonics should be combined with local treatment, and opium is the sheet anchor. He often begins with a full dose of calomel, and afterward a saline aperient every morning. If opium disagrees, sulphonal may be tried. Great nervous excitement and sleeplessness are the indications for the use of sedatives. If there is much nervous depression, quinine is valuable, which may be advantageously combined with opium. Phosphorus and strychnia are also valuable for this condition. Arsenic is not a specific in eczema, and its indications are a deficiency of nerve force, combined with the absence of acute inflammatory lesions. If the eruption is acutely inflammatory, arsenic is positively contraindicated. Ergotin may be useful where there are frequent exacerbations, by its control of the vaso-motor system.

In debility and anemia, tonics are useful, but iron should be used with caution in inflammatory conditions.

Diet is regarded as having only an indirect influence, as, for example, if gout or diabetes exist, the diet appropriate to these disorders should be strictly followed. In acute cases the diet should be limited and not stimulating. In a general way such food should be taken as is best digested by the patient, and a low diet is not to be recommended. Strict moderation with regard to alcohol is necessary, but beer is allowable except in the acute forms. Contrary to most authorities, the writer does not restrict the use of tea and coffee unless they are contraindicated in some other way.

With regard to local treatment, he treats every case as if it were of parasitic origin. He thinks that parasites, even if not the primary cause, are usually secondary factors. He endeavors then, first, to destroy the micro organisms; second, to protect the inflamed part from the air and from further contact with the parasites; third, to soothe irritation. General rules are first, to grade the strength of the remedy according to the patient's toleration; second, to keep it continuously in contact with the part affected. The best remedy in dry, chronic eczema, particularly in that of seborrheic origin is sulphur, and next to that resorcin. Their advantage lies in the fact that they not only kill the micro-organisms, but cause an exfoliation of the horny layer. He begins with 10 grains of precipitated sulphur or of resorcin in an ounce of zinc ointment or some bland application, gradually increasing the amount of the parasiticide. When the inflammation is acute, ichthyol is especially useful, as it is a vascular sedative as well as a parasiticide. Unna's plaster mulls of carbolic acid and mercury, and oxide of zinc are extolled where a continuous local application to chronic areas is wished for. When there is much discharge he washes the part with a weak solution of boracic acid, and afterward dries it with muslin bags containing starch and powdered boracic acid, or with flour mixed with boracic acid. Chrysarobin has been successful in very persistent chronic eczema of the flexures. With regard to warding off a recurrence of attacks of eczema, the writer considers that a change of climate with complete mental and bodily rest is often of benefit. No special stress is laid upon the particular climate; it is the change that is beneficial. Sea-bathing often produces a recurrence, but sometimes checks the tendency to relapse. As to mineral springs, he believes they are chiefly useful in chronic cases. Sulphur springs are best for external use, not, however, when the inflammation is acute. If there is gout or rheumatism underlying the skin affection, sulphur internally is indicated. Of the arsenical waters, La Bourboule and Levico are the best. He concludes, with regard to springs, that none have a specific action on eczema; that the virtue of sulphur waters is due chiefly to their parasiticidal action, and partly to the temperatures at which they are used; and that the good effect of sulphur, iron, and arsenical waters internally is due to quickening the processes of metabolism, increasing the number of red corpuscles, and giving tone to the nervous system.

NEW REMEDIES IN LEPROSY.5

Danielssen, of Bergen, whose name is so closely associated with the study of leprosy, gives the results of his experience with several of the methods that have been lately advocated in the treatment of this disease.

⁴ British Journal of Dermatology, September, 1894.

⁵ Ergänsungshefte zum Archiv für Derm. und Syph., 1893.

Unna, some time since, claimed to have cured a case in an epidemic of small-pox proved that many lepers of tubercular leprosy from Brazil, by means of salicylic | who were attacked enjoyed only a temporary respite acid, chrysarobin and creosote, partly in the form of from their leprous lesions, the nodules showing themointment and partly as pills, together with the inter-nal use of ichthyol. Danielssen's scepticism as to the rapidity of growth. permanency of the cure was justified by the patient's death from leprosy about a year after his return to Brazil. He also tried the method in several cases without result, but was stimulated to further use of it by Unna's assertion that he himself had cured four patients and Dreckmann one by this same treatment.

In the first case reported, one of tubercular leprosy, Unna's method appeared for a time to be effective as almost all the nodules disappeared, although there was at the same time increased emaciation and loss of strength. Intercurrently there appeared outbreaks of elevated, sensitive nodules, which soon, however, disappeared; a pemphigus bulla on the sole of the foot raised the suspicion of a transition to the anesthetic type. The improvement had lasted scarcely a month when an attack of pleurisy supervened, followed by a fresh eruption of nodules, which were quickly changed into ulcers. Later both lungs became affected, the symptoms pointing to tuberculosis, and there, was a progressive emaciation; both ulnar nerves became swollen, diarrhea set in, and the patient rapidly sank. At the autopsy, lesions corresponding to those of tuberculosis were found, together with the bacilli of tuberculosis, so far as it is possible to differentiate the tubercle from the leprosy bacillus. In many of the other organs lesions typical of leprosy were found, together with leprosy bacilli in large numbers. The author then raises the question whether there can be a transformation of the leprosy bacillus in the altered medium in which it finds itself. Whether the lung, being a tissue rich in air and blood supply, may so alter the bacillus in its struggle for existence, that it may be better suited to its changed environment. As to Arning's belief that the affection of the lungs in leprosy must be regarded as a leprous condition, repeated inoculations speak positively against this theory. It is also urged that the myeloplaques found in tuberculosis and in the lungs of leprous subjects have never been satisfactorily demonstrated in purely leprous tissues.

Besides the case that has been cited, twelve other cases of leprosy, four of the anesthetic, four of the tubercular and four of the mixed type, were treated by the Unna-Dreckmann method. In none of these was there any question of a cure. The anesthetic type was wholly uninfluenced; in several of the cases of the tubercular type there was a transient disappearance or decrease in size of the nodules. These results are of importance in connection with the fact that in Unna's journal the assertion was flatly made that leprosy is This assertion was provoked by the fact that under the treatment in question, leprosy nodules were seen to diminish in size and disappear, and the general condition to become much better. Danielssen's experience of fifty years has taught him, however, that there are many forms of treatment by which the nodules can be made to disappear, without a permanent improvement in the disease. Among these methods may be cited the use of strong solutions of carbolic acid, strong potash soaps, stimulating oils, etc. Intercurrent acute affections, as erysipelas, typhoid fever, measles, scarlatina and small-pox may cause a complete disappearance of the skin lesions — temporarily. Experience at any desired temperature from 245° F. to 820° F.

Hydroxylamin, which has been claimed to have a more energetic action than pyrogallic acid and chrysarobin, was tried in several cases, mixed with glycerine and alcohol. Applied to the patches in four cases of the anesthetic type, it caused in two an intense erythematous eczema, while the two remaining cases were unaffected. In four cases of the tubercular type a slight improvement was noted, but there was no last-

Europhen, which is an iodine compound, allied to iodoform but without odor, was tried on account of the claims of its efficacy in the treatment of syphilis. It was employed dissolved in olive oil, injected subcutaneously. No pain was caused. Five patients were thus treated, one suffering from the tubercular, one from the anesthetic, and three from the mixed form. The treatment was suspended after a trial of about four months, without any improvement in the leprous condition being noted, while in all unpleasant symptoms from the toxic effect of the iodine were met with.

Lastly, aristol was tried in three cases, partly internally, dissolved in ether, partly externally, in the form of an ointment. The action was exactly the same as that of the iodide of potash, and the treatment was suspended after a three weeks' trial.

New Instruments.

THE WALTHAM HOSPITAL STERILIZER.

BY A. WORCESTER, M.D., WALTHAM, MASS.

THE sterilizing apparatus has become the most important apparatus in every hospital. Many kinds have been devised and many disadvantages have been met in their operation.

The Waltham Hospital has been so fortunate as to have the services of a mechanical engineer in designing its sterilizer, and the result is so entirely satisfactory that it seems only fair to describe it for the benefit of others who are interested in the sterilization problem.

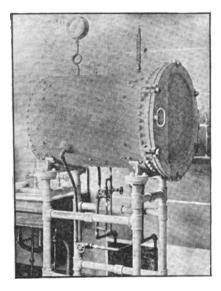
The accompanying illustrations are from photographs taken before the cylinder was jacketed with asbestos to minimize the loss of heat. As is readily seen, its construction is extremely simple. The shell is quarter-inch steel, fitted with vacuum-valve, steam-gauge and thermometer. It is placed on a wrought-iron-pipe stand, which allows easy access to the steam-supply pipes underneath. Inside the shell are four coils of steam-pipe, above and below and on each side of the main chamber, which gives 9,720 cubic inches of working space.

The mode of operation is as follows: After filling the trays with the material to be sterilized, and tightly bolting the door with the screw bolts, steam is admitted first into the circulating coils. After the chamber is thus heated above the condensation point, live steam is admitted direct from the boiler, at any pressure from fifteen to ninety pounds, thus furnishing a steam-bath

This may be continued as long as is desired. supply of live steam is then shut off, and the drip-pipe from the main chamber opened. Very little moisture will remain in the chamber, and this can be entirely removed by continuing the supply of steam for a few minutes longer in the coils. The door of the sterilizer can then be opened and the contents removed at pleasure.

As proof of the efficiency of the process, I am permitted to quote the following results obtained by Dr. A. K. Stone in experiments made at the Massachusetts General Hospital to determine the sterilizing power of this apparatus:

In order that the tests should be as severe as possible, foul dressings were taken directly from patients in the These dressings were folded and done up in towels exactly like newly-frepared dressings, and were then placed in the sterilizer under conditions which are given below. Also a pile of a dozen or more towels, taken just as they had come from the laundry, was enclosed in another towel and subjected to the steam. At the laboratory of the Harvard Medical School one of the towels was removed from the middle of the pile, and the central part was cut out and



placed in test-tubes filled with gelatine or agar-agar. The central portions of the dressings were also cut out, these portions being filled with the discharges from the wounds, and also put in the test-tubes with nutrient material. The tubes were then allowed to remain at the temperature of the body for several days and the following observations were made:

EXPERIMENT I Dressings in the sterilizer for fifteen minutes. In five minutes the steam was 250° F., and then varied during the fifteen minutes from 245° to 250° F. Pressure removed, and the dressings were dried in the dry hot air for eight minutes.

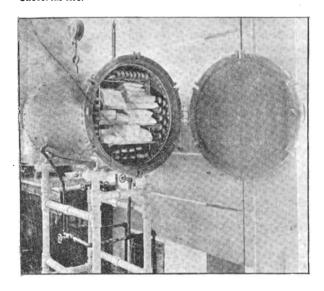
	Tube No. 1.	Tube No. 2.	Tube No. 3.	Tube No. 4.						
			i							
Empyema dressing,	Gelatine (a) growth.	Gelatine (b) growth.	Gelatine (c) growth.							
Absc's-of-the-lung a dressing }	Agar (a) sl't growth.	Agar (b) sl't growth.		Gelatine (b) sl't growth.						
Abscess-of-the-hip dressing }	Agar (a) growth.	Agar (b) sterile.	Gelatine sterile.							
Hospital towels .	Agar (a) growth.	Agar (b) sterile.	Gelatine (a) growth.	Gelatine (b) sterile.						

Each separate experiment showed presence of some form of bacteria, and therefore fifteen minutes is not sufficient for the steam to penetrate the centre of a closed dressing.

EXPERIMENT II. Dressings were allowed to remain in the sterilizer for twenty minutes at a pressure of twenty-five to twenty-six pounds and at a temperature varying from 248° to 258° F.

	Tube No. 1.	Tube No. 2.	Tube No. 3.
Empyema dressing,	Growth with liquefaction.	No growth.	No growth.
Abdominal sinus dressing }	No growth.	No growth.	No growth.
Osteo myelitis dressing }	No growth.	No growth.	No growth.
Skin-graft dressing,	No growth.	No growth.	No growth.

Tube No. 1 of the empyema dressing alone showed the presence of bacteria growth. There is, of course, possibility that the micro organism was introduced from outside during the transference of the gauze to the tube. But it would seem as though twenty-five to thirty minutes was needed to make absolutely sure that the steam will penetrate a thick dressing sufficiently to cause destruction of all bacterial life.



The advantages of this sterilizer are:

(1) The ease with which it can be operated. By simply turning the different steam-valves there is obtained an exposure to live steam under high pressure, and afterwards exposure to dry heat, without moving or handling the material to be sterilized and dried.

(2) By first heating the chamber and its contents to a temperature above the boiling point of water, there is prevented all unnecessary wetting of the material to be sterilized by condensation when the live steam is admitted to the chamber.

(3) The strength and simplicity of construction, which allows the employment of any pressure of steam up to 150 pounds and ensures the durability of the apparatus.

The sterilizers in use at the Waltham Hospital and at the Massachusetts General Hospital were made by the Thomas Phillips Company, of Providence, R. I.

PRINCE BISMARCK, it is said, has the peculiar habit of drinking champagne from the bottle, not from the glass. He declares that only in that way can he get its good effects.



Reports of Societies.

AMERICAN NEUROLOGICAL ASSOCIATION.

TWENTIETH ANNUAL MEETING, WASHINGTON, D. C., MAY 30, 31 AND JUNE 1, 1894.

(Concluded from No. 13, p. 321.)

CIRCUMSCRIBED SOFTENING OF THE PONS; AND IN THE SAME CASE OF THE INTERNAL CAPSULE, CAUDATUM, AND LENTICULA.

This was a joint paper by Dr. CHARLES K. MILLS and Dr. JOHN ZIMMER, of Philadelphia.

The case presented two limited lesions of unusual interest — one in the pons, and a second involving the internal capsule and a small segment of the caudatum and lenticula. The patient, a woman forty-two years old, had a previous history of alcoholism and of acute articular rheumatism. Examination showed slight impairment of mental action, marked somnolency, and imperfect articulation. At rest, the right eye turned strongly to the right, while the left was not deviated. Both eyes could not be turned together to the left. The lateral movement of the left eye to the right was also impaired, and slight uystagmus of both eyes was present. The lids of the left eye could not be brought fully together. Right facial paresis was present, but the tongue was not deflected. Tendon and muscle phenomena were much exaggerated in the paretic limbs. Anesthesia could not be discovered in any portion of the body. About eleven days after admission, she had a second apoplectiform attack. She was now totally unable to articulate, but understood what was said. She was also unable to expectorate, and there was interference with swallowing. A thorough and careful autopsy made by Dr. Guiteras revealed a circumscribed softening of the pons. The lesion, at its cephalic extremity reached to within 1.5 mm. of the ventral surface of the pons; laterally extending to the raphé, and about the middle of the pons slightly across the mesal line. The area of softening became smaller and more deeply situated as it approached the post oblongata, which it almost, but not quite reached. The second region was revealed by a vertical transection of the right basal ganglia and capsule. The widest portion of lesion corresponded to the plane of the cephalic extremity of the thalamus. It was about 17 mm. in its antero-posterior extent. The poutal lesion probably involved the root fibres of the abducens, and the fibres connecting it with the facial fibres or nucleus. The position of the lesion was such as not by any possibility to involve the cell nests of these nerves. The lesion involved the crustal portion of the pons, including a portion of the pyramidal tracts, and the deep transverse fibres. The lesion of the internal capsule was beautifully localized near the genu, probably involving the geniculate and speech tracts.

LESION OF THALAMUS: DEATH FROM INTESTINAL HEMORRHAGE.

This paper was read by Dr. WHARTON SINKLER, of Philadelphia. He referred to the observations of Lussana, Brown-Séquard, Ebstein and Schiff many years ago, in which they produced ecchymoses and hemorrhages into the mucous membranes of the

had worked for many years in a stone quarry, and had received frequent slight injuries to the scalp in consequence of being struck by fragments of stone.

In July, 1892, after having been exposed to the sun, he was suddenly taken ill, and had to be removed to his home in an unconscious condition, where he was seized with convulsions, which lasted for the greater part of two days. After a month he was able to resume his work; but two weeks later he began to have epileptiform convulsions, which recurred at irregular inter-The seizures were vals of from one to two a week. always preceded by an olfactory aura, the patient observing the smell of burning sulphur. After a few months, the patient had maniacal attacks after his fits, and was removed to the Philadelphia Hospital in December, 1893.

There was nothing notable about his condition, except that the attacks of epilepsy were of the precursive form. He would run violently, and imagined that he was pursued by devils. Towards the end of February, he had an attack in which there was a rise of temperature, without any physical reason being discoverable.

His intellectual powers failed; and he gradually fell into a somnolent condition, which lasted for nearly three weeks, at the end of which time he was suddeuly, without premonitory signs, seized with intestinal hemorrhage of a profuse character, from which he died in about twelve hours.

At the autopsy the mucous membrane of the colon was found to be softened and deeply injected, but no lesion was found in the way of an ulceration, or rupture of a vessel which would account for the hemorrhage.

The brain showed very marked evidence of an old lepto-meningitis over the left hemisphere, and there was atheroma of the vessels of the base. In the posterior right thalamus there was found a small area of softening. It was about one-third of an inch in length by one-fourth of an inch in its transverse diameter. No other coarse lesion could be found in the brain.

CEREBRAL HEMORRHAGE: ITS CAUSE AND PREMON-ITORY SYMPTOMS.

DR. C. L. Dana, of New York, presented this paper and a report of 100 consecutive cases of apoplexy with hemiplegia observed at his clinic at the Post-Graduate Hospital, and 79 cases of apoplexy with autopsy ob-Thirty of the latter served in Bellevue Hospital. came under his personal care and observation.

Of 100 non-fatal cases, 36 were due to syphilis. special characteristics due to syphilis are, that they occur in early life, that they are often multiple in character, and that the pathological condition underlying them is usually a thrombosis and softening.

So far as his experience and records went, cerebral hemorrhages are rarely repeated; and it seemed as if in many cases the rupture of an artery changed the vital conditions, as it certainly does the personal habits, so that the attack exercises a conservative influence upon the individual and actually tended to prolong life.

Dr. E. D. Fisher, of New York, read a report of 77 cases. Fifty-one had one attack; 16, two attacks; 9 had three; and 1 had six attacks. All are still living. These cases were observed in his service at the stomach and colon of some of the lower animals, by City Almshouse. The average age at which the first wounding the corpora quadrigemina and optic thalamus. attack occurred was 44^{ρ}_{T} years. His observations, he The patient was a man of sixty-seven years, who thought, confirmed what had been said by the reader

of the paper. The longest duration since the attack was twenty-two years.

LUMBAR PUNCTURE FOR THE REMOVAL OF CEREBRO-SPINAL FLUID.

This was the title of the paper by Dr. WILLIAM BROWNING, of Brooklyn, N. Y.

He reviewed the main points in this recently devised operation. Brief notes of a few cases were given, as well as directions for its performance. following conclusions were reached:

- (1) The method is simple, easily practised and rather attractive.
 - (2) In itself it is usually without danger.
- (3) By it we certainly can draw off cerebro-spinal finid.
- (4) The quantity removed at short sittings has been from one to one and a half ounces in adults.
- (5) This, without doubt, represents the amount of free fluid usually present in the lower vertebral canal even when occluded above.
- (6) In internal hydrocephalus the relief, if any, is but very temporary. In the common form due to tubercular meningitis the result is not worth the trouble, while in the closed or sacculated forms it must rather do harm than good.
- (7) As a diagnostic means, for example, in suspected meningeal hemorrhage, it is valuable. As an index of pressure it may also be worth noting.
- (8) It is worth further trial: (a) as a passing relief in brain tumors not complicated by hydrocephalus; (b) as a substitute for trephining in progressive dementia; (c) in certain spinal troubles; (d) and possibly as a means of applying medication directly to the spinal meninges.
- (9) In conclusion, it may be said that, while admissible in all cases of brain-pressure, there is as yet no established indication for this precedure except for diagnostic purposes.

THIRD DAY. - FRIDAY.

THE TREATMENT OF CONVALESCENCE AND THE AFTER-CARE OF THE INSANE.

DR. HENRY R. STEDMAN, of Boston, considered the dangers attending convalescence in insanity and the precantions necessary to prevent relapse or prolong remissions.

General rules and advice regarding the prevention of insanity are not regarded even by predisposed subjects, and are practically of but little use. The case is different when once an attack of insanity has been experienced. Although in certain cases the proper conduct of convalescence is vital to mental health, the study of this period is confined to a few scattered suggestions in the works on insanity. Instances of abrupt recovery with almost no convalescent stage, are rare. Although it may happen in chronic cases, it occurs, as a rule, in those of short duration — notably confusional insanity and the toxic and neurotic insanities.

Lucid intervals, or spurious convalescences, differ often in no respect from genuine recovery, with the single and essential exception that the sleep does not improve, or is worse. This is a valuable indication in the prognosis of permanent return to reason.

To the cardinal signs of convalescence should often be added the disappearance of decided fear of a return of the attack, and dread of the stigma to follow. It is important to be informed regarding normal and usual something must be done to care for them and obviate

physical troubles of the patient, as their reappearance is another and valuable indication of recovery; so, also, a knowledge of the sequence of immediate prodromata of an attack. They are often repeated in reverse order while the patient is getting well.

Complete mental rest during menstrual epochs, so highly important at this time, is often disregarded, and application of the mind, even to a slight degree, in study or other work, is equally to be deprecated.

Early discharge from the asylum, or from special care away from home, is to be advised against, as a rule, especially in cases of melancholia with a history of suicidal attempts, and after acute mania, the most exhausting form of insanity, and one which leaves the patient particularly susceptible to slight influences for a long time.

On the other hand, we should frequently advise early removal in other cases convalescing from melancholia, particularly when homesickness is a marked feature and occasionally when there is refusal of food. Certain cases of mild mania, also paranoiacs who are independent in the asylum and actively oppose treatment are steadied by outside life. A change also works well until its novelty has worn off.

The first year or so after recovery is a very critical time. The reader gave a number of indications in special cases and suggestions for prevention of relapse.

The above remarks applied chiefly to well-to-do pa An important branch of this subject is the means for the after-care of the pauper insane. There is practically no provision outside of asylums for this class, and practically little advice or other help is given these unfortunates on leaving asylums; while for the physically sick, on the other hand, there is abundant provision for their care during convalescence, and the discharged convict is greatly helped and encouraged by charitable societies for the purpose. Asylum physicians often hesitate to set certain patients at liberty whose mental condition seems to have so far improved as to make it useless to keep this class longer under care (and even some who have fully recovered) for fear that thus suddenly thrown on their own resources, without oversight, or perhaps means of support, they will fall back into their old habits of life which gaverise to their insanity. This fact, and their delicate mental condition, often render them easy victims to designing people.

These and other reasons, have led to the formation in France, of protective societies, called "Societies of Patronage," under official auspices. Their duties are to aid convalescent or recovered pauper patients by gifts of money, clothing and tools; redemption of articles in pawn; payment of rent; admission to convalescent homes in cottages intermediate between confinement and complete freedom, or in hospitals or houses of refuge; securing situations for them; and finally, their supervision wherever employed. work continues during the first month or two after the patient's discharge. Similar societies, or means of relief, have been adopted in England and Scotland. They were described in detail. There is no better work on the score of both humanity and public economy than the adoption in this country of similar means for the prevention of insanity.

DR. E. D. FISHER was of the opinion that patients left the asylum too early. In cases where they are oversensitive regarding their previous incarceration,

a relapse. He was in favor of establishing convalescent homes for such patients, and spoke at length in confirmation of the views of the author of the paper.

Dr. Dercum thought this matter a very important phase in the care of the insane. It is, however, quite difficult to deal with individual cases. Where the element of exhaustion was a prominent causative factor, the patient required detention and care for a much longer time.

DR. STARR was glad to know that Dr. Stedman favored the earlier removal from asylums of melancholics. One of the chief difficulties was in controlling the family, who did not know how to manage the pa-

tient after his return.

Dr. Jones, of Minnesota, said that in Minnesota, since the word asylum has been changed to that of hospital, it has tended to remove any of the supposed stigma that has been usually attached to people who have been in institutions for the insane.

DR. KNAPP and the PRESIDENT concurred in the

views expressed by the reader of the paper.

Dr. Dana said that the subject was of great economic as well as medical importance. He would suggest that a committee be appointed to investigate the

This suggestion was then presented in the form of a motion, which was carried.

The President then appointed as a committee, Drs. Stedman, Dana and Dercum.

CASE OF INFANTILE HEMIPLEGIA, IMBECILITY AND EPILEPSY. CHANIOTOMY: MARKED IMPROVEMENT.

Dr. Edw. B. Angell, of Rochester, reported a case, and read a paper with the above title.

The salient features of the case were forceps delivery, succeeded by double ptosis, occasional tonic spasm of right arm, contracture and hemipalsy of right hand. Physical and mental development was slow; and epilepsy, with three to five seizures daily, supervened three months prior to the operation. At time of examination, the child was partly imbecile. Skull measurement gave a cranial index of .77; palate was high arched; teeth jagged; and right wrist and hand, much smaller than left, were helpless.

A diagnosis was made of pressure in neighborhood of the hand-centre of left motor area, due either to

a hemorrhagic plaque or cyst.

Craniotomy was decided upon, as a tentative measure, with a view of relieving pressure and consequent symptoms, while avoiding the greater risk of opening the dura necessary to removal of the cyst wall. The operation was performed March 13th, last, and upon removal of the trephine button, a sub-dural hemorrhagic cyst was found. The cranium overlying the cyst had become very much thinned, and was freely cut away beyond the limits of the cyst. By an aspirating needle a half-drachm of fluid was removed, otherwise the dura was not injured. The scalp incision healed readily, but through an overtight bandage edema developed, and by the eighth day caused sufficient pressure to develop a hard convulsion and high temperature. With the remedying of this, marked improvement in all the symptoms ensued.

At the present time (three months after the operation) there has been no recurrence of the epileptic attacks, while there has been a commensurate improvement in the mental and moral condition.

which was not opened, was a porencephalic cavity, and that opening and draining it would have been useless.

Dr. PUTNAM agreed with Dr. Mills. He said it was rarely possible to remove a cyst satisfactorily. In a case seen by him the cyst was tapped and the drain left in. Improvement followed.

Dr. W. A. Hammond spoke of two cases on whom craniotomy was performed. One was eighteen years of age, and became an imbecile as a result of an injury to the head. He remained in this condition four years. After operation there was improvement at the end of two months. At the end of a year the improvement was marked. In the other case of a similar character, the operation was followed by improve-

The PRESIDENT said that cysts differed in character. The superficial cysts were due to meningeal hemorrhage during labor, and could be satisfactorily treated by operation.

DR. ANGELL, in closing the discussion, said this was not a case of porencephalus, but an arachnoid cyst from a meningeal hemorrhage.

INFANTILE AMYOTROPHIC LATERAL SCLEROSIS OF THE FAMILY TYPE.

This was the title of a paper by Dr. CHARLES HENRY BROWN, of New York. He gave the history and report of a case. The disease occurred in a boy fifteen years of age. There was marked emaciation, particularly in the upper part of the body, and paralysis and atrophy of all the facial muscles, excepting those of mastication. Fibrillary twitchings were present all over the body. The superficial and deep reflexes were active. Ankle clonus was demonstrable. There was double lateral curvature of the spine. Mentally the boy was fairly bright. He cries readily and is amused at trifles; is microcephalic, and acts and appears like a child of ten. There are evidences of a general arrest of development. Dr. Brown considers his case as belonging to one of the family types of infantile progressive bulbar paralysis, plus the same implication that is found engrafted upon the progressive poliomyelitis of adults, and which gives us amyotrophic lateral sclerosis. In muscular myopathies, the respiration is not involved. The upper facial muscles are usually unaffected, and the "taper mouth" is not observed. The atrophy is more irregular, more bilateral: that is, it is worse on one side. Electric reactions are not of especial importance in diagnosis. In some reported cases of infantile progressive bulbar paralysis they are normal, in others degenerative.

To place this case among the scapulo-humeral, or facio-scapulo humeral types of muscular atrophy is out of the question. Though the neck is much thinned, the scapulo-humeral group and the back muscles are generally the best the patient has. What muscles he does possess are active; and the exaggeration of reflexes, the fibrillary twitchings, and the retractions of tendons that are present, though slight, preclude a peripheral origin of the disease. As far as is known, no case of the kind has ever been reported and diagnosticated as infantile amyotrophic lateral sclerosis of the family type. Hoffman's case, a boy eleven years old, closely resembles it. Here, too, there was marked labio-glosso laryngeal paralysis, great emaciation of upper extremities of the trunk, extending down below the hips, together with exaggerated reflexes in the Dr. MILLS considered it presumable that the cyst, lower extremities and diminished reflexes in the upper.

In Hoffman's case the atrophy was probably too extreme in the upper extremities to admit of much response. In all the cases reported of these bulbar diseases belonging to groups of family types, there has been marked difficulty of respiration and special implication of the upper branch of the trifacial nerve.

TWO CASES OF INGRAVESCENT CEREBRAL HEMOR-RHAGE TREATED BY LIGATION OF THE COMMON CAROTID ARTERY.

This was a joint paper by Dr. F. X. DERCUM and Dr. W. W. KEEN, of Philadelphia.

In the first case reported the symptoms pointed to a slowly progressive capsular hemorrhage extending over three days before ligation of the common carotid was resorted to. The symptoms were steadily progressive and threatened a fatal termination. Ligation of the carotid, as proposed by Mr. Horsely, promptly arrested the symptoms, and the man made an excellent recovery. Months afterward merely symptoms of a spastic hemiplegia persisted, but they were not very marked.

The second case was one in which the symptoms pointed to a progressive hemorrhage occupying eight hours. The patient's condition was so grave at the time of the operation that little was hoped from it, and indeed it proved useless, patient dying several hours afterward.

Dr. Dercum pointed out that the class of cases in which benefit is to be hoped for from ligation of the common carotid are those in which the hemorrhage is decidedly ingravescent in type. He also dwelt upon the difficulties of a differential diagnosis between hemorrhage and thrombosis in such cases, and pointed out that even in case of an error in diagnosis it could not be said that the operation involved additional risk to the brain.

Finally, he suggested that instead of ligation of the vessel the expedient of compression of the common carotid should be tried in every case of apoplexy as soon as the physician arrived. A surgeon is not always at hand, and besides compression of the carotid is so simple a procedure that a bystander can easily be instructed to apply it.

DR. FRANK FRY, of St. Louis, knew of several instances in which the operation had been done. All proved fatal. He believed that none of them were indicated or justifiable.

Dr. Knapp believed that the neurologist does not see the case until it is too late to make a satisfactory

The President thought the chief difficulty was in diagnosis, and that the hemorrhage was usually a selflimited one.

MERYCISM.

This was the subject of a paper by Dr. W. A. HAMMOND, of Washington.

He defined this condition as the functions of rumination and remastication in the human subject. Only about fifty cases had been reported.

Several cases were referred to, among them that of the distinguished physiologist, Dr. Brown-Séquard, who had acquired it as the result of experiments performed upon himself.

The case reported was that of a young man whose mental condition was impaired and who was also the subject of merycism. No special treatment was undertaken against the merycism in this case, but the pa-| ment.

tient was trephined with the purpose of improving his mental condition. There were no unusual features connected with the operation, but it was noticed that the regurgitation did not occur with the meals he subsequently ate, till the fifth day there was a slight return. Eight days later a similar button was removed from the corresponding part of the left side of the skull. From that time (about ten months ago), to the present, there has been no regurgitation. the cure of merycism in this case was directly due to the operations on the cranium, or the result of the mental improvement, is a queston which it would be difficult to answer.

Dr. Knapp was unaware that so few cases had been reported in this country. Two cases had come under his notice. Both were physicians in good mental condition. He thought a distinction should be made between congenital and acquired merycism.

Dr. LLOYD believed that some cases should be considered as a neurosis allied to hysterical vomiting, such as regurgitation from the esophagus.

The President had seen a man who had conquered the habit by the exercise of his own will. His views were in accord with those expressed by Dr. Lloyd.

Dr. Hammond said that acquired merycism was always due to overloading the esophagus, and to the bad habit of rapid eating. He thought it extremely doubtful as to its being a neurosis.

ELECTION OF NEW MEMBERS.

The following-named gentlemen were elected to active membership: Ira Van Gieson, M.D., of New York; E. B. Laue, M.D., of Dorchester, Mass.; and E. D. Bondurant, M.D., of Tuscaloosa, Ala.

ELECTION OF OFFICERS.

The following officers were elected for the ensuing year: President, Philip Coombs Knapp, M.D., of Boston; Vice-Presidents, F. X. Dercum, M.D., of Philadelphia, and W. A. Jones, M.D., of Minneapolis; Secretary and Treasurer, G. M. Hammond, M.D., of New York.

Recent Literature.

A System of Genito-Urinary Diseases, Syphilology and Dermatology. Edited by PRINCE A. MORROW, M.D. Vol II, Syphilology. New York: D. Appleton & Co.

The second volume of the "System of Genito-Urinary Diseases, Syphilology and Dermatology," published by Appleton, and edited by Dr. Morrow, deals exclusively with the subject of syphilis and chancroid, and in its general plan and make-up follows very closely its predecessor on the subject of genito-urinary diseases. It forms a pretty complete treatise on the manifestations of this disease on the various tissues and organs of the body, and aims at embracing the most recent advances in our knowledge of these processes. The work has been divided up among twenty-three contributors, who have in the main presented the subjects allotted to them in a careful and conscientious manner. Naturally such a book, constructed by so many different hands, loses the individuality that marks the value of the treatise from a single pen, and there is necessarily much repetition, and not a little contradiction in state-Many of the articles bear the stamp of real merit, notably the first chapter, on history, evolution and general pathological anatomy, which is a masterpiece in its way, and deserves to be widely read. The writer points out clearly that the old division of syphilis into a primary, secondary and tertiary period, following one another in chronological order, has served its day, and remains now the source of much confusion. It would have added to the value of the book, if this position had been squarely maintained by the other contributors. His classification of the advance of syphilis in four different directions will appeal strongly to all who have taken the interest to compare their practical experience with the teachings and dogmatic statements of the books. This classification is as follows: (1) benignant syphilis, with mild and transitory symptoms; (2) benignant syphilis, with relapsing or persistent superficial symptoms; (3) malignant syphilis, with relapsing or persistent profound symptoms; (4) malignant syphilis, with relapsing or persistent and profound lesions, that are ultimately destructive. In the second category are included a majority of all cases of the disease, while those that belong in the third and fourth are a very small minority.

Upon this masterly opening of the subject there follow chapters on etiology, modes of infection, primary and constitutional syphilis, and syphilis of the skin. The author of the latter chapter (the editor of the system) is to be congratulated on the excellent photographs and photo-lithographs that illustrate his text in such profusion - representations far ahead in point of accuracy, of the usual text-book illustrations. The drawings of microscopic sections, and their accompanying text, are not so satisfactory of their kind as are the illustrations of clinical varieties. Syphilis of the bones and of the upper air-passages is described in chapters that have been carefully compiled and well illustrated. A special chapter is devoted to visceral syphilis, and an exhaustive résumé of all of our present knowledge on this subject is given. The nervous system, the eye and the ear are successively treated by specialists in these departments.

Much space is given to the subject of treatment in this work, both in connection with the special tissues affected, and in a long chapter on the subject generally. In the latter a conservative position is maintained with regard to the several points in treatment that have been the cause of controversy. It is in accordance with the best modern knowledge and the practice of a majority of the best observers that the counsel is given not to begin constitutional treatment before the advent of general symptoms, unless there be some peculiar conditions present that call for immediate action. Excision of the initial lesion is regarded as of doubtful utility, to be practised only when the lesion is seen at the outset. In seven instances the writer has convinced himself that the disease was in this way aborted.

A special chapter is devoted to syphilis in relation to public health, which is a valuable addition to the book and to our knowledge of this subject. The book closes with a full discussion of "chancroid" in all its

Congenital Affections of the Heart. By George CAR-PENTER, M.D., London. London: John Bale & Sons. 1894.

Dr. Carpenter disclaims any desire to rival the classic works of Rokitansky, Kussmaul or Peacock in the evitably led beyond the field of his regular work into

with the idea only of supplementing the ordinary textbooks, about which complaint is so often made that they are not sufficiently precise or explanatory, and has succeeded in producing a book which will be useful to students and practitioners alike. That he has thrown but little new light upon the diagnosis of congenital heart affections is to be attributed rather to the nature of the subject than to the fault of the author. The etiology, however, and character of the various malformations, together with the signs and symptoms of each, so far as they can be differentiated, are fully described, and the prognosis and treatment carefully considered. A number of illustrative cases, some completed by an autopsy, are included in the text, which shows the difficulties of coming to a conclusion as to the nature of the malformation.

Inebriety, or Narcomania: Its Etiology, Pathology, Treatment and Jurisprudence. By NORMAN KERR, M.D., F.L.S. Third edition; 8vo; pp. xxxix, 780. London: H. K. Lewis. 1894.

The third edition of this well-known work may be regarded almost as a new work, for 317 pages have been added. The new matter is of much interest. The author devotes a chapter to the comparatively new subject of ether intoxication, which has attained alarming proportions in some parts of Ireland. Ether drinkers have been known to take half a pint a day; the period of intoxication is one-third the length of the alcoholic period, and a man can get drunk three times a day for sixpence. A second new chapter deals. rather unsatisfactorily, with the question of the medical administration of alcohol. The question of the relations of inebriety and insurance is discussed in detail, and the medical legal relations of inebriety both with reference to the civil law and to the criminal responsibility of inebriates are fully discussed. These additions add much to the value of the work, which is probably the most complete treatise in English upon the subject.

The Etiology of Osseous Deformities of the Head, Face, Jaw and Teeth. By EUGENE S. TALBOT, M.D., D.D.S., Professor of Dental Surgery, Woman's Medical College; Lecturer in Dental Surgery and Pathology, Rush Medical College, Chicago. Third edition, revised and enlarged, with 461 illustrations. Chicago: The W. T. Keener Co.

In this volume the author has collected a vast amount of data with regard to irregular developments of the bony parts of the head. These data have been obtained from measurements, taken from collections of skulls representing race and class peculiarities. To this work has been added a large number of measurements taken from the living subject. These investigations have been undertaken to establish not alone what is abnormal in the development of the bony structure of the head, but also to determine certain normal conditions as the height of the palatine arch and the distance between the first molars of the upper jaw. In the degenerate criminal and neurotic classes the author finds a much larger proportion of irregularities in the development of the jaw, palate and teeth than obtains amongst moral and healthy individuals.

This book is of especial interest as showing how a thoughtful and well-educated dental practitioner is inpreparation of this monograph. He has written it the broad field of investigation usually given up to the practitioner of general medicine. For the dentist much interest will be aroused in the discussion of the causes producing V-shaped or saddle-shaped arches. To the physician the discussion on naso-pharyngeal growths and their relation to high palates cannot fail to be of interest.

Essentials of Practice of Pharmacy. Arranged in the Form of Questions and Answers. Prepared especially for Pharmaceutical Students. Second edition, revised. By Lucius E. Sayre, Ph.G., Professor of Pharmacy and Materia Medica, School of Pharmacy, University of Kansas. 200 pp., 8vo. Philadelphia: W. B. Saunders. 1894.

This number (18) of Saunders's Question Compends, revised to correspond with the United States Pharmacopæia of 1870, has for its object both to assist the student to fix in his memory the classic instruction upon that work, and to open up and lay out the subject in a manner that he can easily follow out by himself. This edition has been enlarged by the addition of an outline of drug and plant analysis, by the structural formulæ of the organic carbon compounds used in medicine, and by the chemical tests used in the pharmacopæia, as well as by problems in allegation and specific gravity. The work seems well fitted to fulfil its purpose.

Manual of Physical Diagnosis. By JAMES TYSON, Second edition. Philadelphia: P. Blakiston, Son & Co. 1893.

The popularity of Dr. Tyson's manual is shown by its appearance in a second edition. It has been enlarged by the addition of short chapters on the use of sphygmograph and cardeograph in diagnosis, and an appendix which treats of the examination of the blood, that for the more important bacilli associated with the infectious diseases, the various chemical examinations required in diagnosis of diseases of the stomach, and directions for making an autopsy. This new edition retains the conciseness combined with practical sufficiency which made the first so valuable as a text-book.

Die Bedeutung der hypnotischen Suggestion als Heilmittel. Herausgegeben von Dr. med. J. GROSSMANN. 8vo; pp. xviii, 160. Berlin: Bong & Co. 1894.

The editor of the Zeitschrift für Hypnotismus has reprinted in this volume various letters sent to him by men in different parts of the world in answer to his inquiries as to the value of hypnotism as a therapeutic remedy, and published in the Zeitschrift. The immediate occasion of his inquiry was the restrictions against the use of hypnotism by the French military authorities and by the Russian government. answers, therefore, deal with two distinct questions. All agree that there should be no strict regulations against the use of hypnotism as a therapeutic agent; but some of the writers, as Danilewsky, are not in active practice, and so make no use of hypnotism, and other writers, as Janet, are guarded in their en-As a rule, however, the twenty-nine authorities whose answers are here collected, are unanimous in their belief in the value of hypnotism as a therapeutic agent. We cannot help thinking, however, of the ancient sceptic's inquiry in the temple about the offerings of those who made their vows and The volume would be never came back from the sea. a much more valuable contribution to the subject, if, in addition to the endorsements of Bernheim and Forel and Liébeault and Tuckey, we had the views of those good one, well and carefully written.

who have tried hypnotism and given it up. Strümpell is quoted in the preface as saying that numberless apparently wonderful cures have been obtained by it, but the rest of his very wise remarks on the subject are omitted. Tuckey's testimony as to the value of hypnotism in London could be better appreciated if we also had the testimony of Ferrier, Buzzard and Gowers. Jolly, Mendel, Oppenheim and Siemerling might well have been called on to supplement the testimony from Berlin, and the confessions of failure and dissatisfaction from New York would not be out of place. The book is, after all, but the presentation of one side of the question; but, as after over fifty years of trial, the value of hypnotism as a therapeutic agent is still a vexed question, it must be acknowledged that even this one-sided presentation of the question fails to be convincing.

A Manual of Instruction on the Principle of Prompt Aid to the Injured, including a Chapter on Hygiene and the Drill Regulation for the Hospital Corps, U. S. A. Designed for Military and Civil Use. By ALVAH H. DOTY, M.D. Major and Surgeon, Ninth Regiment N..G. S., N. Y., late attending surgeon to Bellevue Hospital Dispensary, New York. Second edition, revised and enlarged. New York: D. Appleton & Co. 1894.

In Surgeon Doty's manual, the second edition of which has just appeared, there is little to criticise. It gives just such an epitome of anatomy and physiology as the intelligent layman desires to know, without going so far as to encourage him to usurp the duties which belong to the physician or surgeon: such knowledge as will cause his first aid to be better rendered because he has an idea why he should act.

The writer is not always clear in the use of the words aseptic and antiseptic, confounding one with the

The statement that the symptoms of poisoning from mushrooms "usually occur within the hour" is only true of the irritant, but not fatally poisonous varieties, as in the more serious cases due to the presence of the alkaloid amanatine which is found in certain members of the amanito family, where the symptoms are delayed from six to twelve or more hours. In the treatment no mention is made of atropia, which should be our sheet-anchor in such cases.

A valuable addition to this edition is the chapter on hygiene, which is so well done that one regrets that the space devoted to the drill regulations of the hospital corps had not been better utilized by the contemplated chapter on nursing. The drill regulations can be obtained in a more convenient form by those to whom a knowledge of them is necessary.

Diseases of the Nose and Throat. By F. DE HAVIL-LAND HALL, M.D., F.B.C.P., Physician in charge of the Throat Department at the Westminster Hospital. Philadelphia: P. Blakiston, Son & Co. 1894.

This book of 500 pages describes concisely and systematically the diseases of the nose, pharynx and larynx, giving all essential information, and judiciously omitting controversies and other uninteresting details. The division of subjects is excellent, each subject being taken up by itself in a way which makes reference to it easy and clear. No attempt is made to cover the anatomy of the parts, which omission for a book of this character is to be commended. The book is a

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STATISTICS OF RENAL SURGERY.

In a recent number of the Arch. für klin. Chir.,¹ is an important contribution by James Israel, giving the results of 81 capital operations on the kidney performed by him during the past eleven years, with a mortality of 13.7 per cent. Of these operations 37 were nephrectomies, of which six were fatal. This result is exceptionally favorable, as compared with the results obtained by other surgeons. Thus, of the 100 cases collected by Barth in 1892, 62 either died from the operation or from metastases or intercurrent troubles.²

In 19 of Israel's cases, the kidney was extirpated for hydronephrosis, for pyonephrosis, and abscess of the kidney; four of these patients (21 per cent.) died. The nine patients suffering from hydronephrosis all got well.

In 12 cases, the extirpation was performed for malignant growths. Only two of these patients died. Israel attributes this small mortality less to the skill of the operator than to improvement in the means of diagnosis, which enables the surgeon to distinguish renal tumors from divers other abdominal growths, and thus perform ablation of the kidney without opening the peritoneum. Moreover, the greater precision in diagnosis obtained by the surgeon enables him to operate earlier, when the tumor is still small, and has not acquired attachment to surrounding parts. Thus, in two cases, the tumor which had not exceeded the size of a cherry, had been recognized by palpation while the patient, lying on the sound side, was taking a deep breath.

Tumors of the liver coming down in front of the kidney may be a cause of mistaken diagnosis. Thus, in one case, the author found at the operation, instead of the supposed renal tumor, a tumor the size of the two fists descending from the lower surface of the

Deutsche Med. Woch., June 8, 1892.
 See also Semaine Médicale, Septémber 8, 1894.

liver. He promptly closed up the wound. In another case, a young girl of fifteen, he found instead of a renal tumor, an angio-sarcoma of the liver, which was removed with success.

Apart from the data afforded by palpation and the detection of particles of the neoplasm in the urine—even when the bladder is found intact by the cystoscope—there exists no certain sign of malignant tumor of the kidney. It cannot even be said that the type of the hematuria is characteristic. Israel suggests as of some value, a diagnostic method which consists in plunging the needle of a Pravaz syringe into the substance of the tumor and obtaining by suction a little of the contents of the tumor. In three cases he has succeeded in thus removing enough of the tissue elements to enable him to make a diagnosis of the neoplasm.

A second cause of lessened mortality in nephrectomy operations is the exclusive employment of the extraperitoneal method. It is in this way that Israel has removed all the tumors of the kidney — even the most voluminous — on which he has been called to operate. There need be no fear in making a large incision, transverse or oblique, curved or angular. The kidney should first be separated from the fat in which it is embedded, then lifted up, tied off and removed; then by the aid of long retractors, with large blade and polished so as to reflect the light, the retro-peritoneal space is brought well into view, so that all bleeding can be stopped and any accidental perforations of the peritoneum sutured. Lastly, the wound is drained — not packed — and closed with silk sutures.

In one of Israel's fatal cases, symptoms of iodoform poisoning set in, to which he attributes the death. Since then he has abandoned the use of antiseptics in dressings of the abdominal wound. In another, case where cancer of the right kidney was extirpated the patient, a feeble and cachectic woman, was kept under chloroform two hours; she died at the end of forty hours, and at the autopsy there was found recent cloudy swelling of the parenchyma of the left kidney, which the author considered as the cause of death. This alteration, he says, can only be explained by the toxic action of chloroform on a person already greatly enfeebled. He has since investigated the action of chloroform on the kidneys.

In 17 cases of extirpation of one kidney, he found in 14 signs of a slight affection of the other kidney after the operation. This affection is generally of short duration. In a patient who underwent an operation for cysto-sarcoma, he observed a transient albuminuria. Six months later, this same patient underwent another surgical operation, and again for several days albumin and casts were found in the urine. These facts seem to demonstrate the noxious action of chloroform on the reual epithelium.

A very interesting case of ureteritis was observed by Israel in an adult man affected for eight years with severe attacks of renal colic on the left side. The diagnosis of renal calculus was made. February 10,

1893; an incision was made over the kidney, which was exposed from the convexity to the hilum, but no calculus was found. As the sufferings of the patient were aggravated instead of benefited by the operation. two months afterward a long incision was made in the same region, and the ureter was laid bare in its whole It was found indurated and very much thickened; had at least three times the normal diameter. By an incision in the pelvis, a No. 10 bougie was easily passed down to the bladder. This opening was not closed, in hope that the free flow of urine by the wound would put an end to the sufferings of the patient. This was not the case, and a few days later it was decided to perform ablation of the kidney, which presented to a notable degree the alterations of hydronephrosis by retention. The patient made a speedy recovery, and has been entirely relieved of his pains. Israel explains the obstinate and continuous renal colics in this case by the fact that the ureter was converted into a rigid tube by the chronic inflammation and could no longer expel the urine by its periodical and forcible contractions. There was, hence, stasis of urine and elevation of pressure, sufficient to cause colics.

Nephrectomy was practised in four cases of renal tuberculosis. One of the patients died soon after of tuberculous meningitis; the others survived the operation and have kept well to the present time.

In two cases of renal syphilis nephrectomy was performed with success.

In three cases of urinary calculus attended with anuria, the operation of nephrolithotomy was performed. Two of these patients died, the operation having been too long delayed; in fact, to be successful, the lithotomy ought to be practised early, at least within forty-eight hours of the onset of the anuria. In the patient that survived, the secretion of the right kidney was resumed immediately after the removal of the left kidney. This fact seems to indicate the possibility of a reflex anuria by arrest of the secretion of a kidney by reason of occlusion by a calculus of the ureter of the other kidney. The author has also seen the irritation of the pedicle of an extirpated kidney produce an arrest of the secretion of the other kidney. A drainage-tube had caused this irritation; when this was removed, the quantity of urine increased from 500 to 2,000 c. c. with cessation of the pain which before had existed at the site of the operation.

In cases of floating kidney, Israel is on general principles opposed to operative interference. He does not believe that the symptoms observed are, in general, the consequence of the abnormal mobility of the kidney. Often the physician has to do with women that are nervous or present some affection of the genital organs. Others have enteroptosis, and it is the relaxation, the fall of the viscera, which is the cause of the functional troubles, rather than the floating kidney. Moreover, we often observe hysterical nephralgias when the kidney is normally situated, also many women present no symptom although one of the kid-

neys is mobile. Lastly, by an appropriate treatment, we may sometimes cause disappearance of the symptoms wrongly attributed to renal ectopia; and on the whole it may be affirmed that the medical treatment of this affection is much more important than any local treatment.

Nevertheless, nephropexy has its indications, as when the surgeon finds himself in presence of a case of floating kidney accompanied by those paroxysms of renal pain which are the prodrome of intermittent hydronephrosis. Likewise he will have recourse to nephropexy when the patient complains of continuous pains which seem certainly due to displacement of the kidney, and which resist all medical treatment.

SUICIDE IN NEW YORK.

THE subject of suicide has attracted a large amount of attention in New York during the past two weeks, owing partly to the unusually large number of cases which have been recorded there, and partly to a reported interview of Ingersoll, in which he is quoted as approving and in some cases even advising this method of getting rid of trouble. Whether the publicity of this subject has produced any appreciable increase in the number of persons who have taken their own life is perhaps doubtful, although the daily papers are responsible for the statement that a very large proportion of bodies, recently, have had in their pockets copies of his arguments. Of much better authority is a recently published communication giving a large number of statistics by the Registrar of Records to the Board of Health.

It is very difficult, he says, in the majority of cases of self-destruction, to determine whether there was an insane impulse or delusion prompting the act. In a majority of cases, however, the cause of the suicide can be traced to abnormal physical conditions or mental disappointments of various kinds, intemperance, business reverses, and family differences. It is reasonable to believe, that some of the causes assigned have more influence upon the natives of one country than of another, and that this may be due to national habits and customs. There is no apparent reason why the Germans, who as a class are wealthier and more prosperous than the Irish, should so largely exceed the latter in suicides, unless it be the Teutonic temperament. The Irish show a lesser number of suicides, in proportion to their population, than any of the other foreign-born inhabitants of the city of New York. The disproportion between suicides of males and of females is very marked. The statistics of eleven years show that suicide was much more prevalent among males than among females; the proportion during this period of suicides of males being 3.64 to every one among females, and this notwithstanding the fact that the female population is larger than the male, which would imply a better endurance of the evils of life on

MEDICAL NOTES.

THE CHOLERA. — The cholera is slowly but steadily decreasing in St. Petersburg and in most of the provinces of Russia, the largest number being still reported from Nijni-Novgorod where there are about forty new cases each day and some twenty deaths. In St. Petersburg there are only about fifteen new cases a day. In Galicia and Bukowina the epidemic shows no diminution in the number of cases, and is constantly reported from new towns. In Germany the cases are few and scattered.

SMALL-POX IN CHICAGO. — The small-pox outbreak which threatened to spread widely in Chicago the last two months has been checked, and is apparently not becoming epidemic, there being less than a dozen cases last week.

PROFESSOR FRAENKEL TO GO TO HALLE. — Professor Carl Fraenkel, of Marburg, has been appointed to the Chair of Hygiene at Halle, and will begin his work there in the early spring.

DR. BACCELLI AND THE MUD TREATMENT FOR GOUT. — It is reported by the Lancet that Dr. Baccelli is to visit the Stabilimento Terminale of Albano, near Padua, to undergo the mud treatment for his gout.

DEATH OF DR. OERTEL. — Telegraphic news reports the death of Dr. Oertel, of the Hygienic Institute of Hamburg, from Asiatic cholera contracted while making investigations of infected water from the Vistula.

THIOL IN ERYSIPELAS. — Dr. Rudheff, of St. Petersburg, in his recent hospital report especially mentions the good results obtained from the use of thiol in cases of erysipelas. He applies a forty-per-cent. solution to the affected parts five times a day.

THE DEMI-MONDE OF BERLIN. — According to a recent report of a committee of the Berlin Medical Society, the members of the demi-monde were estimated to number from 40,000 to 50,000. In 1886, the number of professional prostitutes was only 3,000.

St. Luke's Hospital, New York. — Dr. Charles A. Powers has resigned his positions as attending surgeon to this hospital and to the New York Cancer Hospital, and his lectureship on surgery at the Post-Graduate Medical School, and has removed to Denver, Col.

THE NEW YORK STATE MEDICAL ASSOCIATION.

The Eleventh Annual Meeting of the New York
State Medical Association, will be held Tuesday,
Wednesday and Thursday, October 9, 10 and 11, 1894,
at the Mott Memorial Hall, 64 Madison Avenue, New
York City.

THE COST OF THE INSANE TO LONDON. — The report of the Asylums Committee of the London County Council for the last year shows an expenditure in the department of lunacy of over two million dollars. The board has over eleven thousand insane persons in its charge, an increase of fifteen per cent. in the last four years.

THE ILLNESS OF THE CZAB. — There would seem to be little doubt that the Czar of Russia is ill, if the "special authenticated" reports of the daily press are correct in their medical diagnosis. The illness thus far is due to the following different afflictions: "two or three strokes of apoplexy," "cancer of the stomach," "Bright's disease," "diabetes," "taking cold while waiting in a telegraph office for a message from his son."

AN OPHTHALMIC CLINIC IN PERSIA. — Some time ago Dr. Galezowski, of Paris, was called to Persia to treat the Shah's son for some ocular weakness due to general causes. The Shah is reported so pleased with the success of French ophthalmology that he has established a clinic for diseases of the eye in Persia and placed it under the direction of an appointee of Dr. Galezowski.

AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION.

— The following officers have been elected for the coming year by the American Electro-Therapeutic Association: President, Dr. A. Lapthorn Smith; Vice Presidents, Drs. J. H. Kellogg and Charles R. Dickson; Secretary, Dr. Emil Heuel, New York City; Treasurer, Dr. R. J. Nunn, Savannah; Executive Council, Drs. W. J. Herdmann, Augustin H. Goelet, W. J. Morton, G. Betton Massey and O. B. Douglass.

Physicians' Bequests to Hospitals.— Several very generous bequests to medical charities have recently been made by physicians. The late Dr. Albert B. Miles, Surgeon of the Charity Hospital of New Orleans, left \$10,000 each to the following institutions: Medical Department of Tulane University of Louisiana; Charity Hospital of New Orleans; and the Hôtel Dieu, also of New Orleans. Mr. Gervas Taylor, of Ireland, left £27,750 to various Dublin hospitals.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, October 3, 1894, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 85, scarlet fever 37, typhoid fever 49.

HARVARD MEDICAL SCHOOL. — The Harvard Medical School opened on September 27th. The entering class is the largest in the history of the school, there being this fall one hundred and sixty-one matriculates.

HARVARD MEDICAL SCHOOL EVENING LECTURES.

The evening lectures at the Harvard Medical School, which were so successful last winter, are to be continued this year. The lectures will be given at the Medical School on successive Thursday evenings during the fall and winter, and all members of the profession are cordially invited to be present. The first lecture of the course will be given on Thursday, October 11th, at 8 P. M., by Surgeon-Major John van R. Hoff, U. S. A., the subject being "A Glance at the History of Military Sanitation." This is to be followed

by a lecture on "The Duty of a Military Medical Officer in Peace and War." The following lectures have thus far been arranged for: Dr. S. J. Mixter, "Modern Surgery in Private Practice," "Surgery of the Intestine"; Dr. D. W. Cheever, "Medical Ethics"; Prof. W. T. Councilman, "Bright's Disease"; Prof. T. Dwight, "Applied Anatomy of the Head and Neck in Adults and Children"; Dr. J. H. McCollom, "Diseases Dangerous to Public Health"; Prof. J. C. White, "The Cutaneous Features of Tuberculosis, Syphilis and Leprosy"; Prof. H. C. Ernst, "Tuberculosis-Immunity"; Dr. E. Cowles, "The Relation of Insanity to Neurasthenia"; Dr. F. H. Davenport, "The Disorders of Menstruction"; Asst.-Prof. M. H. Richardson, "The Operative Surgery and Prognosis of Mammary Cancer," "A Consideration of Intestinal Obstructions, Acute and Chronic, with Technique of Resections"; Dr. T. W. Fisher, "Psychiatry, Old and New, in New England"; Asst.-Prof. W. T. Porter, "The Physiology of the Cortex of the Brain"; Dr. A. Worcester, "Trained Nurses." A circular giving the dates of the lectures may be had at the Medical School.

An Ambulance for Cambridge, Mass.—The city government of Cambridge, Mass., has appropriated six hundred dollars for the purchase of an ambulance, for which there has been a long-existing need.

THE CARNEY HOSPITAL TRAINING SCHOOL FOR NURSES.—The graduating exercises of the Carney Hospital Training School for Nurses were held October 1st. Six nurses were given diplomas.

DR. PLINY EARLE'S BEQUEST TO LEICESTER, Mass. — The town of Leicester, Mass., has received six thousand dollars under the will of the late Dr. Pliny Earle, for the erection of a building for the public library of the town.

NEW YORK.

PLACABDING OF APARTMENTS WHERE CONTAGIOUS DISEASE EXISTS. — At the last meeting of the Board a recommendation made by Dr. H. M. Biggs was adopted providing for the better protection of the public by the placarding of all apartments where there are contagious diseases. The warning placards are to be in different colors: white for diphtheria, red for scarlet fever, and blue for measles.

MORTALITY. — During the week ending September 29th there were but 703 deaths in the city, against 1,017 reported births. The mortality from all classes of diseases was below the average, and this was noticeably true of the contagious diseases. From small-pox, scarlet fever and measles there were 2 deaths each, from diphtheria, 31, typhoid fever, 12, malarial fever, 4, consumption, 84, pneumonia, 50, bronchitis, 12, cardiac diseases, 44, and Bright's disease, 37.

NEW QUARTERS FOR THE BOARD OF HEALTH.

— On September 29th the City Health Department moved from its old quarters in the building on Mott Street which it shared with the Police Department for

many years, to the new Criminal Court Building on Centre Street, adjoining the Tombs prison. In its new location the Board of Health will have much more ample accommodations than in its former quarters, and the facilities for the proper discharge of its functions will be greatly increased. Fourteen rooms have been assigned for its use on the ground floor of the building, nine on the second floor, and two on one of the other floors.

Migcellaup.

FIRST AID IN ELECTRIC ACCIDENTS.

DR. W. S. HEDLEY, of Brighton, writing of the frequency of accidents from electric wires in modern municipal life, says it is time that some carefully considered authoritative code of instruction be prepared for use in such cases, and suggests the publication of some simple rules for first aid for the use of non-medical persons. He suggests the following list:

Rules for Guidance in Electric Accidents .- (1) Break the circuit at once, if there be an interrupter close at hand and you know how to use it. If not, lose no time, but proceed to Rule 2. (2) Do not touch the man's body with your bare hands, but if india-rubber gloves are not at hand pull him off the cable by his coat-tail, or fold your coat or some such dry article into two or three thicknesses, and, using this as a pad to take hold of the body, pull it away from the circuit and resort to Rule 5. (3) If unable to get him off, raise with covered hands that part of the body which is touching the earth, or one of the poles of the circuit. This will break the circuit, and it will usually be thus possible to get him easily away, and, if so, proceed to Rule 5. (4) If still unsuccessful, make another pad, and, placing it between the ground and that part of the body in contact with the ground, continue your efforts to detach him. (5) Having pulled him away from the cable, free his neck from clothing, and treat the case as one of drowning, one method being as follows: (6) Open his mouth, and, taking hold of the front part of the tongue with your fingers (covered with a handkerchief if you have one), draw the tongue forwards, and gradually let it go back sixteen times a minute. Be sure that the root of the tongue is acted upon and drawn forward. If the teeth are clenched and you cannot get them apart with your fingers, gently separate them with the handle of a pocket-knife or by a small piece of wood, cork, etc. (7) Resist the efforts of the bystanders to pour stimulants down his throat until a medical man arrives and "takes over" the case.

THE DANGERS OF THE BICYCLE.

THERE is no safety in a bicycle. At all ages and to both sexes it offers under the guise of a pastime an insidious allurement to deformity and disease. At first it was hoped that the danger from the wheel was only to the pedestrian or that the risk to life and limb from reckless riding into obstructions was the rider's fault and that the docile wheel was innocent. But pathology

¹ Lancet, September 15, 1894.



and evil, like a rat in the wall, cannot be long ignored. Clinical evidence has now been adduced by reported cases, to show that no one can safely ride a velocipede.

The young and growing child should not ride it for his cartilages are plastic, and his spine pliable, and kyphosis rides with him on the saddle. The maiden and the young matron may not ride with safety for the effect upon their pelvic viscera is said to be much more evil than running a sewing machine indoors. The refreshment and vigor gained from a spin into the country along smooth roads bordered by green fields and running brooks, under a clear fall sky, cannot compensate an outraged Hygeia. The contents of a woman's pelvis should not be jarred, these medical reporters tell us, better a total extirpation than a jolt.

But surely the vigorous and adult young man may ride! Far from it, says the Frenchman. The Academie has heard already a long list of virile evils from this form of "le sport." Prostatitis, cystitis, orchitis, epididymitis, even urethritis, follow from the strain; and if the young men of France are to be saved, they are warned not to indulge in the practice of bicycling. The aged, who have good rigid cartilages and spines and whose reproductive viscera are less injurable, escape these early dangers, but are not yet safe in taking to a wheel.

M. Petit reports three cases of sudden death attributed to bicycles; two of them had recognized heart-disease, the third was over-corpulent.

Quæ cum ita sint, surely the bicycle is to be looked upon as a menace which threatens us almost from the cradle to the grave, and a machine more to be avoided than a roulette wheel. But it is to be doubted whether such a beneficial exercise will perish because a few imprudent persons with cardiac lesions overdo themselves, or a French youth excoriates his perineum. There have been too many spindly children built up to healthy vigor, and too many chlorotic, languing girls made rosy and buxom by riding, for physicians to be easily alarmed and dissuaded from believing in "wheeling."

THE ATTRACTION OF FOOTBALL FOR IN-TELLECTUAL MEN.

In a well-reasoned article on the present state of college football, Prof. E. L. Richards, of Yale, speaks of the attractions of the game for intellectual men as well as for the student of muscular science. He says, speaking of the relative attractions of football and other athletic games:

"That the game has had attractions for intellectual men in the past is shown by the fact that the average scholarship of men on the football teams has of late years been higher than that of men in the other athletic organizations. In the years 1879 to 1888 the average standing of men not on athletic organizations was, on a scale of 4, 2.69; for members of the university boat crew the average was 2.52; for members of the baseball nine it was 2.41; for members of the football team it was 2.68. Track athletics were not in existence as an organization through the whole decade, but for the few years when there was a university team the average was 2.66. In the previous decade, 1869 to 1878, it is only fair to add that the average of the football men was slightly below that of the

1 Popular Science Monthly, October, 1894,

other athletes, it being 2.51 to their 2.56. I can only account for the fact of the rise of the average in the second decade by the change in the numbers of the team from twenty to eleven — a change giving opportunity for more skill, thus rendering the play more attractive to men of mind. Notwithstanding the present style of mass play, which puts a premium on physical strength and weight, it was a surprise to me to find that the average scholarship of the sixteen men from the academic department, including players and substitutes, was higher than the average of any class which ever graduated. I cannot believe, however, that the high scholarship of football players will always prevail, unless the style of the game be changed to one which admits of more open play.

"The present style of mass play and momentum play puts a premium on weight and brute force. The mingling men in masses makes injuries more probable than in an open style of play. The mass play makes the game as little as possible a kicking game. eliminates a great deal of the element of skill. Skill ought to be encouraged by setting some sort of premium on it. Increasing the number of points scored by a drop-kick from the field might accomplish this somewhat. Some changes in the rules regarding 'interference' would do more. If, again, the 'warnings' for 'rough play' were entirely omitted, and the umpire were instructed to send a man off the field at the first offence, captains would train their men to avoid these plays entirely. Then the experts, in reforming the game, could not do better than turn their attention to the umpires. If a plan for training umpires could be devised it would be a good thing."

SOME CLINICAL FEATURES OF THE BACTE-RIOLOGY OF DIPHTHERIA.

Dr. Welch, in his report in behalf of the American Committee on Diphtheria to the Congress of Hygiene and Demography at Budapest, presents 1 a careful study of the bacteriological investigations of diphtheria made by various observers in the United States up to May, 1894; the first study was made in 1889, and since then between six and seven thousand cases have been bacteriologically recorded. Of the conclusions given in résumé, many are of statistical or scientific interest only, but others are of great clinical interest. It is felt that the results of official bacteriological examination of cases by board of health, are satisfactory and of use in controlling supervision and isolation of cases, as well as for diagnosis. Of all suspected cases between 58.5 and 67.5 per cent. are found to be true diphtheria, and these are for the most part uncomplicated by scarlet fever. At least 80 per cent. of the cases of membranous croup are of diphtheritic origin.

"In general the great majority of cases of pseudomembranous anginas in scarlet fever are due to streptococci, but where diphtheria is prevalent and opportunities are favorable for exposure to diphtheria a large proportion may be due to the diphtheria bacillus."

The pseudo-membranous inflammations of the throat not caused by the Klebs-Löffler bacillus, are in most cases due to the streptococcus pyogenes,—though

¹ American Journal of Medical Sciences, October, 1894.

other bacteria may be associated. He says: "The mortality in these affections is low in private practice, being 1.7 per cent in 408 consecutive cases in New York. In hospitals it may be as high as 25 per cent. Death is generally due to some complication, the most important complications being scarlet fever, membranous laryngitis, and broncho-pneumonia. The disease seems to be only slightly, if at all contagious.'

Of clinical and practical importance are the results of the investigation of the length of time a case of diphtheria is to be considered contagious. In 43.2 per cent of the cases studied for this purpose, the diphtheria bacilli disappeared within three days after the complete disappearance of the exudate. In others the delay was longer, in one case being seven weeks.

"The value of isolation is statistically proven, for in 14 families, with 48 children, where little or no isolation of a case of diphtheria in each family was undertaken, virulent diphtheria bacilli were found in 50 per cent. of the children, of whom 40 per cent. later developed diphtheria. The bacilli were found in less than 10 per cent. of the children in families where the case of diphtheria was well isolated.

"Antiseptic irrigation and cleansing treatment of the throat lessen the liability of those thus exposed to

develop diphtheria.

"All members of an infected household should be regarded as under suspicion, and where isolation is not enforced, the healthy as well as the sick should be prevented from mingling with others until cultures or sufficient lapse of time give the presumption that they are not carriers of contagion."

Correspondence.

"THE MODEL SURGICAL CLINIC."

BERKSHIRE Co., MASS., September 26, 1894.

MR. EDITOR: - In the very accurate and trustworthy account of a modern model surgical clinic recently given in the JOURNAL, the writer seems to have omitted in the report of the chemist, that the patient was not examined for lead disease, inasmuch as that fad had faded out some time ago; and that as regards arsenical poisoning, it was not possible, without an ophthalmoscope to perceive anything green in the patient's eyes, besides he had habitually worn an unlined soft hat, without a green (or any other) band, and had not eaten any green peas during the season.

These slight omissions, however, may be inserted in

future editions.

We hope that similar reports will be frequently given, that the irregular unregistered "practiser" (vide Gay passim) may be duly posted in all the truly scientific methods of the day.

Through want of proper education, I am compelled to Unqualifiedly yours, subscribe myself,

A WARNING TO PHYSICIANS.

Boston, October 1, 1894.

M.D. (limited).

Mr. EDITOR: — A man representing himself to be Dr. J. B. Kilsey, stating that he was burned out in the recent Minnesota fire, who has been obtaining money of the profession in this vicinity, and who presents a letter from N. J. Hughes, Rector of St. Mary's Church, New York, is a J. Hughes, Rector of Surgery.
swindler, and said letter is a forgery.
MARLBORO STREET.

"DIPHTHERIA CASES."

HARVARD UNIVERSITY MEDICAL SCHOOL. BACTERIOLOGICAL LABORATORY.

Boston, October 2, 1894.

MR. EDITOR: - Permit me, through your columns, to ask the gentlemen who have "diphtheria-cases" from this laboratory to return them as soon as possible. The demand upon us for investigations of this nature in the city makes Very truly yours, this request necessary. HAROLD C. ERNST, M.D.

METEOROLOGICAL RECORD,

For the week ending September 22d, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

	Baro- meter	Thermom-			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r.		Inches.
Date.	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8,00 P. M.	Daily mean.	8.00 А. М.	8.00 P. M.	8.00 A. M.	8.00 P. M.	R.00 A. M.	8.00 P. M.	Rainfall in in
S16 M17 T18 W19 T20 F21 S22	30.10 30.08 30.04 29.76 29.96	62 62 64 60 70 70	65 68 62 80 80	58 60 59 59 60 61 60	100 97 95 100 99 95 88	97	100 93	N.W. N.W. E. S.E.	N.E. N.E. E. E. S.W. N.W. S.W.	3 4 10 4 10 4	3 4 2 14 10 4 10	G. O. O. C. C.	0.	0.12 0.25 1.34
										1	1	ļ		

*O., cloudy; C., clear; F., fair; G., fog; H., hasy; S., amoky; R., rain; T., threat ening; N., anow. † Indicates trace of rainfall. 837 Mean for week.

RECORD OF MORTALITY FOR THE WEEK ENDING SATURDAY, SEPTEMBER 22, 1894.

		nd.	the state of	Ę	Percentage of deaths from					
Oities.		Estimated population.	Reported deaths in each.	Deaths under five years.	Infectious diseases.	Consump- tion.	Diarrhosal diseases.	Typhoid fever.	Diphtheria and oroup.	
New York .		1,956,000	665	307	19.95	11.40	11.70	1.05	4.20	
Chicago		1,438,000	_	-	_	-	_ =			
Philadelphia		1,139.457	378	140	18.36	12.15	7.56	2.70	6.21	
Brooklyn .		1,013,000	447	226	22.88	11.22	12.98	1.32	6.38	
St. Louis	•	540,800		==		. =		-		
Boston	•	501,107	239	95	23.94	15.12	12.60	8.36	5.88	
Baltimore .		500,000	.=				7.60	3.80		
Washington	•	285,000	105	35	19.95	8.55	7.60	3.80	3.50	
Cincinnati .	•	325,000	_	45		_ =	13.32	3.33		
Cleveland .	•	325,000	90	40	32.19	3.33	13.02	3.00	1.11	
Pittsburg .	•	272,000	_	_	_	: —	_	_	_	
Milwaukee .	•	265,000		7			_	_	_	
Nashville .	•	87,754	26	•	3.85	11.55	_	_	_	
Charleston .	•	65,165	_	_	_	_	_	_	_	
Portland	•	40,000	28	12	85.70	3.57	17.85	14.28	3.57	
Worcester .	•	100,410	35	15	42.90	2.86	41.04	14.20	3.51	
Fall River .	•	92,233	27	11	33.33	11.11	18.50		3.70	
Lowell	٠.	90,613	23	13	34.80	11.11	21.75	8.70	3.10	
Cambridge .	٠	79,607	20	10	35.00	10.00	20.00	0.10	_	
Lynn	•	65,123 50,284	10	2	30.00	20.00	10.00	10.00	10.00	
Springfield .	•	49,900	10		30.00	20.00	10.00	10.00	10.00	
Lawrence . New Bedford	•	47,741	20	7	25.00	20.00	20.00		_	
	•	43,848	20	· -	20.00	20.00	20.00	_	_	
Holyoke Brockton .	•	33,939	8	2	75.00	25,00	37.50	12.50	12.50	
Salem	•	83,155	11	5	54.54	20,00	27.27	9.09	18.18	
Haverhill .	•	32,925	14	4	14.28	35.70	7.14	7.14	10.10	
Malden	•	30,209	iô	2	10.00	500		10.00	_	
Chelses	•	29,806	14	9	21.42	7.14	14.28		_	
Fitchburg .	•	29,383	7	ŏ				_	_	
Newton	•	28,837	10	8	_	10.00	_	_	_	
Gloucester .	•	27,293	_	_	_		_	_	_	
Taunton	•	26,955	12	6	16.66	_	16.66	_	_	
Waltham .	:	22,058	6	3	16.66	16.66	33.33	16.66	_	
Quincy	:	19,642	-	l — .	_	_	-	_	_	
Pittafield .	:	18,802	14	6	21.42	21.42	21.42	_	_	
Everett	:	16,585	7	3	_	14.28	_	-	_	
Northampton	:	16,331	9	8	_	11.11	_		_	
Newburyport		14,073	5	1	_	_	=	_	-	
		10,920	3	1	_	,				

Deaths reported 2,282: under five years of age 1,007; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 512,



¹ Vol. exxxi, No. 8.

consumption 222, acute lung diseases 176, diarrheal diseases 282, diphtheria and croup 105, typhoid fever 49, scarlet fever 23, whooping cough 23, malarial fever 14, measles 6, cerebro-spinal

whooping-cough 22, maiarial fever 14, measles 6, cerebro-spinal meningitis 4, erysipelas 4, small-pox 3.

From scarlet fever Cleveland 10, New York 5, Boston and Lowell 2 each, Brooklyn, Lynn, New Bedford and Northampton 1 each. From whooping-cough Philadelphia, Brooklyn and Washington 4 each, Boston and Cleveland 3 each, Fall River, Cambridge and Lynn 1 each. From malarial fever New York and Brooklyn 4 each, Philadelphia 2, Nashville, Lowell, Springfield and Waltham 1 each. From cerebro-spinal menits Washington, Lynn and Chelsea 1 each. From measles New York 5, Cleveland 1. From erysipelas New York 2, Philadelphia and Brooklyn 1 each. From small-pox New York 3.

OFFICIAL LIST OF (HANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 22, 1894, TO SEPTEMBER 28, 1894.

CAPTAIN CHARLES E WOODRUFF, assistant surgeon, is relieved from duty at Fort Assimiboine, Montana, and ordered to Fort Sheridan, Illinois, for duty, relieving CAPTAIN FRANCIS J. IVES, assistant surgeon.

CAPTAIN IVES, On being relieved by CAPTAIN WOODRUFF, is ordered to Plattsburg Barracks, N. Y., for duty, relieving CAPTAIN HARRY O. PERLEY, assistant surgeon.

CAPTAIN PERLEY, on being relieved by CAPTAIN IVES, ordered to Baltimore, Md., for duty as attending surgeon and examiner of recruits, relieving CAPTAIN LOUIS W. CRAMPTON, assistant surgeon.

CAPTAIN CRAMPTON, on being relieved by CAPTAIN PERLEY, is ordered to Fort Meade, South Dakota, for duty.

FIRST-LIEUT. BENJAMIN BROOKE, assistant surgeon, is relieved from duty at Camp Pilot Butte, Wyoming, and ordered to Fort Canby, Washington, for duty.

FIRST-LIEUT. THOMAS H. RAYMOND, assistant surgeon, is relieved from duty at Fort Canby, Washington, and ordered to Fort Riley, Kansas, for duty.

CAPTAIN JOHN L. PHILLIPS, assistant surgeon, ordered to report in person to the commanding officer Fort Walla Walla, Washington, for duty at that station, the assignment to duty at Fort McKinney, Wyoming, being revoked.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U.S. NAVY FOR THE WEEK ENDING SEPTEM-BER 29, 1894.

N. J. BLACKWOOD, passed assistant surgeon, detached from Naval Hospital, Norfolk, and to the U. S. Receiving-ship "Independence."

J. B. PARKER, surgeon, detached from U. S. Receiving-ship "Independence," home and wait orders.

L. W. ATLEE, passed assistant surgeon, detached from the U. S. S. "Pinta," home and one month's leave.

HOWARD WELLS, surgeon, detached from the U.S.S. "Detroit" and to the U.S.S. "Montgomery."

HOWARD E. AMES, surgeon, detached from the U. S. S. "Montgomery" and to the U. S. S. "Detroit."

GEORGE B. WILSON, passed assistant surgeon, detached from the Naval Hospital, Norfolk, and to the U.S. S. "Castine."

C. D. W. BROWNELL, assistant surgeon, detached from the U. S. Receiving-ship "Vermont" and to the Naval Proving Ground, Indian Head, Md.

L. H. Stone, assistant surgeon, detached from Naval Proving Ground and to the U. S. Receiving-ship "Vermont."

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FOUR WEEKS ENDING SEPTEMBER 22, 1894.

FESSENDEN, C. S. D., surgeon. Granted leave of absence for thirty days. September $12,\,1894$.

MURRAY, R. D., surgeon. To proceed to Beaufort, S. C., on special duty. September 20, 1894.

BAILHACHE, P. H., surgeon. Detailed to represent service at meeting of American Public Health Association. September 21, 1891.

VANSANT, JOHN, surgeon. Granted leave of absence for thirty days. August 30, 1894.

HUTTON, W. H. H., surgeon. Relieved from quarantine inspection duty and ordered to rejoin station, Detroit, Mich. September 12, 1894. Granted leave of absence for thirty days. September 20, 1894.

SAWTRLLE, H. W., surgeon. Granted leave of absence for five days. September 14, 1894.

GASSAWAY, J. M., surgeon. Granted leave of absence for one day. September 17, 1894.

Banks, C. E., passed assistant surgeon. To report at Bureau for temporary duty. September 10, 1894. Detailed to represent the Service at meeting of American Public Health Association. September 21, 1894. Relieved from temporary duty at Bureau and directed to rejoin station (Portland, Me.). September 22,

CARMICHAEL, D. A., passed assistant surgeon. Granted leave of absence for thirty days without pay. September 6,

WHITE, J. H., passed assistant surgeon. Detached as chairman, Board to locate Quarantine Station South Port, North Carolina. September 13, 1894.

Bratton, W. D., passed assistant surgeon. To proceed to Wilmington, N. C., for duty. August 27, 1894.

Wertenbaker, C. P., passed assistant surgeon. To assume command of Deleware Breakwater Quarantine Station. August 27, 1894.

STIMPSON, W. G., passed assistant surgeon. To proceed to Port Townsend, Washington, and assume command of quaran-tine station. September 10, 1894. Granted leave of absence for five days. September 15, 1894.

BROWN, B. W., passed assistant surgeon. To report at Washington, D. C., for duty. August 31, 1894. Detailed as acting chief clerk, Marine-Hospital Bureau. September 21, 1894.

HOUGHTON, E. R., passed assistant surgeon. Granted leave of absence for seven days. September 19, 1894.

EAGER, J. M., assistant surgeon. To proceed to Mobile, Ala., for temporary duty. September 11, 1894.

STRAYER, EDGAR, assistant surgeon. To proceed to Pitts-burgh, Pa., for duty. August 21, 1894.

PROCHAZKA, KMIL, assistant surgeon. To proceed to Detroit, Mich., for duty. September 10, 1894.

ROSENAN, M. J., assistant surgeon. Commissioned as passed assistant surgeon. September 4, 1894.

HARVARD MEDICAL SCHOOL.

EVENING LECTURES.

The first lecture this winter will be given on Thursday evening, October 11th, at 8 o'clock, by Surgeon Major John Van R. Hoff, U. S. A. Subject, "A Glance at the History of Military Sanitation." Physicians are cordially invited.

RECENT DEATHS.

MYRON UNDERWOOD, M.D., of Eldora, Iowa, died August 12th. During the War of the Rebellion he was surgeon of the Twelfth Iowa Infantry.

GEORGE WASHINGTON DAVIS, M.D., M.M.S.S., died in Holyoke, Mass., September 18, 1894, aged forty-seven years.

BOOKS AND PAMPHLETS RECEIVED.

Treatment of Face Presentation. By Charles Jewett, M.D., Brooklyn, N.Y. Reprint. 1894.

Atony of the Intestine. By Julius Friedenwald, A.B., M.D., of Baltimore, Md. Reprint. 1894.

L'Ichthyol dans le traitement des uréthrites et des cystites. Par le Dr. Roberto Villetti, Médecin des hôpitaux de Rome. Rome: Imprimerie Innocenzo Artero. 1894.

Ueber die Anwendung des Ichthyol bei Wunddruck der Füsse. Von Dr. Leopold Herz, k. u. k. Regimentsarzt in Pilsen. Wien: Aus dem Aerztlichen Central-Anzeiger. 1894.

Young's Orthopedic Surgery; a Manual of Orthopedic Surgery for Students and Practitioners. By James K. Young, M.D., Instructor in Orthopedic Surgery, University of Pennsylvania, Philadelphia. Philadelphia: Lea Brothers & Co. 1894.

Appunti Sull'Azione Fisiologica e Terapeutica Dell'Ittiolo. Clinica Medica di Padova, diretta dal prof. A. De Giovanni. Dott. Angelo Ceconi, (assistente). Estratto dalla Gazetta degli Ospedali e delle Cliniche, 1894. Milano: Casa Editrice Dottor Francesco Vallardi.

Psorospermoses Cutis. Von Dr. A. Ravogli, Cincinnati. Uber die Beziehungen des Ekzems zu den Schleimhauten. Von Dr. von Sehlen, Hannover. Sonder-Abdruck aus Monatshefte für Praktische Dermatologie, 1894, Verlag von Leopold Voss, Hamburg u. Leipzig.

Original Articles.

STUDIES IN THE PATHOLOGY OF DIPH-THERIA.

BY J. H. WRIGHT, M.D.,

Assistant in Pathology, Harvard Medical School.

(Concluded from No. 14, p. 835.)

III.

The pathological anatomy and bacteriology of experimental diphtheria.

In the course of all of this work autopsies on guineapigs which have died after inoculation with the Klebs-Löffler bacillus have been made in 160 instances. This number includes two animals inoculated from an autopsy not included in our list. In the majority of cases notes have been taken with reference to the condition of the tissues at the seat of inoculation, the presence or absence of the characteristic subcutaneous edema, the presence of the acute lymphadenitis, of fluid in the thoracic cavity, of edema of the lungs, of necrotic foci in the liver and the condition of the suprarenal capsules.

These points embrace nearly all of the gross lesions which are observed in experimental diphtheria, and it has been considered worth while to give here in a statistical manner the results of our observations.

Local reaction of varying intensity has been observed in 145 of the 160 guinea-pigs. This has consisted in general of injection, edema, hemorrhage, fibrinous exudation and necrosis of the tissues of the abdominal wall. Great variation is observed in the character of the lesions at this point. In some cases nothing more than slight injection and a few slight hemorrhages are seen, while in others all of the conditions mentioned may be present. In animals which have survived for some days the tissues at this point may be sometimes observed to be infiltrated with a dense, tough, brawny material extending over a considerable area and greatly increasing the thickness of the belly wall. Over this area the skin is tightly adherent. In 13 animals, including 2 which did not succumb to the effects of the inoculation, ulceration has been observed. In some of these the eschar has been several centimetres in The sloughing process seems to be preceded by an induration of the character above described in the tissues beneath.

The occurrence of the typical gelatinous edema of the subcutaneous tissues of the abdomen and thorax has been observed in a certain number of cases.

Local edema, more or less extensive, may be said to have been present in about 100 of the 160 animals.

Enlargement and usually more or less congestion of some or all of the lymph-glands of the inguinal and axillary regions has been noted in 142 of the autopsies.

In some cases the glands have presented a hemorrhagic condition.

In the liver and spleen, being found in the former in 12 per cent. of the autopsies.

The lymph-glands at the brim of the pelvis in the retroperitoneal region and those of the mesentery seem to be usually affected along with the superficial ones. Congestion of the mesenteric glands is much less frequent, however, than in the case of the retroperitoneal glands.

Effusion of fluid into the thoracic cavity has been noted in 68 of the 160 autopsies. The fluid was almost invariably colorless and varied greatly in amount.

In some instances the thorax has apparently been completely filled. Edema of the lungs is recorded in 82 cases.

A characteristic lesion of experimental diphtheria is the presence of necrotic areas, visible to the naked eye in the liver. These lesions are not common, as will be apparent from the fact that they have occurred in about 49 instances, or 31 per cent., and their occurrence seems to bear no relation to the duration of the infection in the animal.

A more striking phenomenon, however, than any of the preceding, is the congestion or hemorrhagic condition of the suprarenal capsules. These have been found more or less red in color, instead of the normal bright yellow, in 130 of the 160 cases. This condition is almost invariably present in animals which have succumbed within a few days after inoculation; and in general it may be said that the combination of all the lesions enumerated above is to be more frequently observed in acute cases.

But one of the animals inoculated in the course of the work developed paralysis. This is in accord with the experience of Löffler, who seems to have observed it very rarely in the guinea-pigs inoculated by him.

In our study of the bacteriology of experimental diphtheria the main purpose has been to determine the frequency with which the Klebs-Löffler bacillus invaded the blood and internal organs of the inoculated animal. In this disease in the guinea-pig as well as in diphtheria in man, the bacillus has been considered as remaining at the point of invasion. The only observations of its occurrence in the organs of an inoculated guinea-pig which we have found in the literature is that of Zarniko, who mentions having met with it in a necrotic focus in the liver, and that of Abbott, who has reported the presence of the bacillus in certain lymphatic structures in the mesentery.

At the autopsies of the animals, as a matter of routine, cultures have been made from the seat of inoculation, blood of heart, liver, spleen and kidney. The coagulated blood serum previously described has been the medium employed for the purpose, with a few exceptions. As in the autopsies on man, rather more material than is usual has been commonly taken for each culture, by means of the coarse flattened platinum wire. In a few cases cultures have either not been made at all or only from some of the above-named situations. The numbers given below include cultures from three animals which have not died spontaneously, but have been purposely killed. The results may be briefly summarized as follows: among 155 livers from which cultures were made, 19 yielded Klebs-Löffler bacilli. Of 152 cultures from as many spleens, 15 contained the same organism. The bacillus also grew in 4 of 151 cultures from the kidney, and in 7 of 153 cultures from the blood of the heart.

The organism has therefore occurred most frequently in the liver and spleen, being found in the former in 12 per cent. of the autopsies. The colonies which develop in these cultures are, as a rule, few in number, rarely exceeding a half-dozen in a tube. The presence of the Klebs-Löffler bacilli in the viscera does not seem to bear any relation to the length of time the animal survived nor to the clinical character of the case from which the culture used for inoculation was derived, nor is its presence in the liver definitely associated with the occurrence of the foci of necrosis alluded to above. Moreover, we have no reason to believe that

its presence in any internal organ has any effect per se

upon the tissue of that organ.

The cultures from the seat of inoculation in 161 animals have contained the bacillus inoculated in all but 20. It may also be mentioned that from three guinea-pigs the organism has been recovered by culture from the seat of inoculation about thirty-one to thirtyeight days after the date of inoculation. The persistence of the bacillus in the tissues for this length of time is interesting.

Cases of infection of various ulcerated surfaces and inflammatory processes with the Klebs-Löffler bacillus, as well as some other instances in which it has been observed.

The occurrence of the Klebs-Löffler bacillus in other pathogenic processes than diphtheria has been rarely noted in the literature. The only other condition in which its presence has been repeatedly demonstrated is rhinitis fibrinosa. That this disease, however, is really to be regarded as a form of diphtheria of the nasal mucous membrane, has been shown by the work of Concetti,28 Stamm,24 Baginsky 25 and Abbott.26

In the edematous tissue about tracheotomy wounds in diphtheria, Spronk * has found the Klebs-Löffler bacillus in three cases. It has also been observed by Neisser 25 in a superficial ulceration about the anus of a diphtheria case, and was proven virulent. Brunner so isolated it from three cases of inflammation of the fingers and from a case of phlegmon of the scrotum. The bacilli from only two of these were found to be virulent, the others yielding organisms of a mild degree of virulence. In all four cases the bacillus was accom-

panied by pus organisms.

In diphtheritic conjunctivitis its presence has been reported by Escherich,2 by Babes,30 by Elschig 81 and by Kolisko and Paltauf 16 in single cases. In the case of the first mentioned the organism was non-virulent. Three cases of the occurrence of the Klebs-Löffler bacillus in the pus of otitis media have been reported by Councilman,⁸² and one case of its occurrence in diphtheritis of the stomach by Löffler. I Finally, Howard ss has found it in pure cultures and in large number in the valvular vegetations, spleen and kidney of a case of ulcerative endocarditis. The organism here was found to be non-virulent. The writers named seem to comprise all those who have observed this organism in inflammatory processes other than diphtheria.

It will be noted that in most of the few cases in which inoculations have been made, the bacillus from these sources has exhibited little or no virulence. This lack of virulence, or rather the manifestation of only slight virulence, towards guinea-pigs has also been observed in some of our cases, as will be seen below.

In the study of cases of the occurrence of the Klebs-Löffler bacillus which are reported in this section, the same methods as those described in the preceding sec-

tion have been employed.

When convenient the sterilized cotton "swabs" have been used for obtaining the material for culture. The bouillon cultures used for inoculation have been made in the one-per-cent. sugar bouillon colored with litmus, which was mentioned in the first section of this work. Cultures, have, as in the other cases, been made from the organs and the seat of inoculation of and a half years. Vide Autopsy XIV. the animals which succumbed.

Some of the cases have been observed at the autopsies reported in the second section, but it has been thought better to reserve the special descriptions for this section.

CASE I. Fistula in ano. Wm. B., aged eighteen years. Admitted to contagious wards of the Boston City Hospital with diphtheria. Klebs-Löffler bacilli were found in throat by culture. The patient also had a fistula in ano. Some two weeks after admission active inflammation developed in this. The ulcerated surface exposed between the nates was about one inch square. The tissue about it was inflamed for two or three inches. The ulcer was covered with a greenish, slimy exudation, and eventually a false membrane was formed. This acute condition subsided after a time, and the patient also recovered from the diphtheria.

A culture from the ulcer showed the presence of Klebs-Löffler bacilli. These were found very virulent, the two animals dying in thirty-six and seventy-two hours respectively after inoculation with .2 c. c. and .4 c. c. of a twenty-four-hour bouillon culture. They exhibited the characteristic lesions, and the organism was recovered by culture from the seat of inoculation

in both.

Ulcer on arm. CASE II. Winifred C., aged ten months. Vide Case X. Admitted to contagious wards with diphtheria. Klebs-Löffler bacilli demonstrated by culture. Some time after admission, from a vaccine pustule on left arm a deep gangrenous ulcer A culture from this showed the presence of formed. Klebs-Löffler bacilli.

Two guinea-pigs, weighing 210 and 260 gms. received respectively .2 and 1 c. c. of a twenty-four-hour bouillon culture of the third generation. Both survived from seven to eight days. At their autopsy, exudation and infiltration was found at the seat of inoculation. The only other marked lesion was edema of the lungs in each, as well as some glandular enlargement.

The Klebs-Löffler bacilli were recovered by cultures

from the seat of inoculation in both, and from the liver, spleen and kidney of one. The cultures from the other animal showed the presence of the bacillus in the

spleen alone.

CASE III. Excoriations on face. Charles Van G., aged three years. Vide Autopsy VII.

At the autopsy of this case, excoriations on face and nose were noted and cultures made from them. In the culture from the excoriation on the nose Klebs-Löffler bacilli and streptococci developed and in that of the excoriations on the face, Klebs-Löffler bacilli. No animal inoculations were made.

CASE IV. Excoriation on lip. Fred B., aged four years. Vide Autopsy V.

At the autopsy of this case a number of small excoriations were observed on the lip below the nasal opening. Klebs-Löffler bacilli developed in the culture made from these.

A guinea-pig weighing 425 gms. received .3 c. c. of a twenty-four-hour bouillon culture (third generation) of this bacillus subcutaneously. The animal died in forty-eight hours.

The usual appearances of acute experimental diphtheria were noted at the autopsy. The bacillus was recovered by culture from the seat of inoculation, but from nowhere else.

At the autopsy of this case a slight excoriation over

anterior aspect of the left tibia was observed and a culture was made from it. Klebs-Löffler bacilli and staphylococcus pyogenes aureus developed in this. No animal inoculation.

CASE VI. Ulcer on leg. Idella McL., aged five Vide Section I, Series 2. Admitted to the contagious wards with diphtheria. Klebs-Löffler bacilli present by culture. Some time after admission a deep undermining ulcer with brawny edges and grayish base formed on right leg. It was supposed to have originated from a puncture with a hypodermatic syringe.

A culture on two occasions, several days apart, showed the presence of Klebs-Löffler bacilli. The bacilli obtained from the first culture did not cause the death of the animal until about twenty-nine days after inoculation. The guinea-pig weighed 190 gms. definite lesions were found at the autopsy, and the bacillus was not recovered from the seat of inoculation. The second culture, however, furnished a virulent organism, killing a guinea-pig (weight 210 gms.) in thirty-six hours. The quantity inoculated in each case was .2 c. c. and a bouillon culture was used. The first animal was inoculated with a culture of the fifth generation and the second animal with one of the third generation. It may be possible that the discrepancy in the results of the inoculation may have been due to some attenuation of the organism which was obtained in the first instance. It may be added that the second animal showed characteristic lesions and the bacilli were recovered from the seat of inoculation but from none of the organs.

It is worthy of note that the bacilli from the nose of this case showed little or no virulence.

CASE VII. Ulcer on hand. Annie O'T., aged one Vide Autopsy XII. year.

At the autopsy of this case a small superficial ulcer less than one centimetre in diameter was observed on the left hand. A culture made from this yielded Kleb-Löffler bacilli as well as other organisms.

A guinea-pig weighing 220 gms. was inoculated subcutaneously with .3 to .5 c. c. of a twenty-four-hour bouillon culture of the third generation. The animal survived four and a half days. Characteristic lesions were found at the autopsy. The blood of the heart as well as the seat of inoculation was found to contain Klebs-Löffler bacilli. In the culture from the former but one colony developed. The other organs were negative. It may be mentioned that the bacilli from the bronchus and from the lung of this case were also found to be of medium or slight virulence toward the guinea-pig, as may be seen by Autopsy XII.

Case VIII. Otitis media. Pus from ear. Irene

T., aged one year. Vide Autopsy IX and Case IX.

The otitis media with perforation of the tympanum occurred in the course of diphtheria. Klebs-Löffler bacilli had been present, by culture, in the nose for some time (vide Section 1, Series 2). A moderate number of Klebs-Löffler bacilli and numerous streptococci were found to be present in cultures made during life from the thin but abundant purulent discharge from

A guinea-pig weighing 190 gms. was inoculated subcutaneously with .2 c. c. of a twenty-four-hour bouillon culture (third generation) of the Klebs-Löffler bacilli The animal died in thirty-six hours thus obtained. with characteristic lesions. The bacillus was recovered only from the seat of inoculation.

CASE IX. Mastoid abscess. Irene T. Vide Autopsy IX, et supra.

At the section the calvarium and brain were removed and the mastoid cells on both sides broken open. Both were found to contain creamy pus. A culture was made from the pus of the mastoid bone of the side opposite to that of the ear from which the culture mentioned above was taken (intra vitam). On this there developed Klebs-Löffler bacilli and streptococci. No animal inoculated.

CASE X. Otitis media (?). Pus from ear. Winifred C., aged ten months. Vide Case II.

Admitted to contagious wards with diphtheria. The presence of Klebs-Löffler bacilli was demonstrated by cultures. In the course of her stay in the ward a discharge from the ear was observed. This was found to contain Klebs-Löffler bacilli along with other organ-

A guinea-pig of 340 gms. weight, which was inoculated with .3 c. c. of a twenty-four-hour bouillon culture, fifth generation, survived eleven and one-half days. Some of the lesions of experimental diphtheria were found at the autopsy, principally shown by a red color of the suprarenals. The bacillus was recovered from the seat of inoculation. As in the case of the bacillus from the ulceration on the arm of this same patient, this bacillus from the ear showed only a slight degree of virulence. Some attenuation by cultivation may have taken place, however, as it was inoculated in the fifth generation.

CASE XI. Purulent conjunctivitis with keratitis. Charles R., aged four years. Vide Autopsy X.

At the autopsy the right eye was observed to contain a considerable amount of pus beneath the lids, and the cornea was cloudy. A culture from the pus showed the presence of Klebs-Löffler bacilli in addition to pus organisms. No inoculation of an animal was

CASE XII. Thomas M., aged six years. Vide Autopsy XI.

At the autopsy a culture was taken from the paronychia of the toe. In this there developed Klebs-Löffier bacilli and numerous colonies of staphylococcus pyogenes aureus.

A guinea-pig weighing 200 gms. was inoculated with .2 c. c. of a twenty-four-hour bouillon culture, third generation, of the Klebs-Löffler bacilli thus obtained. The animal survived, as did also the guineapig inoculated with the Klebs-Löffler bacillus found in the bronchial gland. As has been stated elsewhere, virulent bacilli were found in the throat of this case during life. The organism inoculated was studied in cultures on blood serum, agar and litmus bouillon, and was found both in cultures and in morphology to agree with the typical Klebs-Löffler bacillus. The litmus bouillon was rapidly colored red, which, according to Escherich,2 is only seen in cultures of the virulent bacillus.

CASE XIII. Acute ulcerative endocarditis. Autopsy by Dr. Councilman. Body, that of a young man.

Anatomical diagnosis. Acute ulcerative endocarditis, acute intracapillary glomerulo-nephritis.

Bacteriological diagnosis by cultures: Spleen, liver, both lungs, wall of left ventricle of heart, all negative. Aortic valve (vegetation), Klebs-Löffler bacilli (a halfdozen colonies), pneumococci, staphylococci, bacillus coli communis. Tricuspid valve, Klebs-Löffler bacilli

(a half-dozen colonies), pneumococci and other organisms. Kidney, two typical colonies of typical Klebs-Löffler bacilli developed in the culture.

The Klebs-Löffler bacilli from the valves of each side of the heart were inoculated in bouillon cultures into four guinea pigs. The quantities used varied from .8 or .4 c. c. to 1 c. c. All of the animals survived, the inoculation having little or no effect upon them even locally. The bacilli from each valve were also carefully studied in their growth in bouillon, agar, blood serum, potato and gelatine as well as in their morphology. In all these respects they were found to be identical with the Klebs-Löffler bacillus.

It may be mentioned also that they produced a rapid reddening of the litmus-sugar bouillon, which Escherich states is only done by virulent Klebs-Löffler bacilli. This red color was rapidly produced and persisted indefinitely. The agar cultures were never observed to show the brown color which the same writer regards as characteristic of the so-called pseudo-diphtheritic bacillus. The bacillus found in the kidney also changed the bouillon to a red color.

This case resembles very much the case of ulcerative endocarditis reported by Howard, which we have before alluded to. In that case a non-virulent Klebs-Löffler bacillus was found in the valvular vegetations and in the organs. Its identity with the true Klebs-Löffler bacillus in all respects except virulence was fully demonstrated.

CASE XIV. From a tuberculous lung. John S., aged twenty-six years. Autopsy by Dr. Councilman.

The case was essentially one of disseminated tuberculosis. The lungs were most affected. At the autopsy cultures were made as usual from all the organs. There was a tuberculous ulcer of the trachea from which no cultures were made. In the culture from the lung numerous colonies of Klebs-Löffler bacilli and streptococci developed, in addition to a few colonies of staphylococcus aureus and other organisms. Streptococci and other organisms were present in the culture made from the spleen, while the kidney and liver were

The Klebs-Löffler bacillus from the culture from the lung was inoculated into a guinea-pig weighing 200 gms.; .5 c. c. of a twenty-four-hour bouillon culture of the second generation was used. Death in thirty-six hours, with the lesions of experimental diphtheria. The bacillus was recovered from the seat of inoculation, but from none of the organs.

CASE XV. From a lung in the stage of gray hepatization of a lobar pueumonia. Annie K., aged fifty eight years. Autopsy by Dr. Wright.

At the autopsy portions of both lungs were found to be consolidated, and were in the stage of gray hepatization. One lung had partly broken down, and a thoracentesis had been performed. The culture from a consolidated area in one of the lungs developed Klebs-Löffler bacilli (not numerous) in addition to numerous colonies of streptococci and a few of the staphylococcus pyogenes aureus, as well as other bacteria. ures from the blood, kidney, spleen and liver showed the presence of a streptococcus septicemia. The throat was not examined. A guinea-pig inoculated in the usual manner with the Klebs-Löffler bacillus died after about three weeks. No lesions found.

The organism agreed with the Klebs-Löffler bacillus in its morphology and in its growth in blood serum

The production of acid thus indicated is said by Escherich, as before noted, to occur only with the virulent form of the organism. The bacillus has not proven virulent and constitutes another exception to that writer's statement.

CASE XVI. From the skin of the thigh of a diphtheria patient. Beatrice C., admitted to hospital with diphtheria. As the child lay in its crib with one thigh exposed, a culture was obtained by rubbing a swab over the skin where a dark reddish area was observed. This area of discoloration was evidently due to a puncture with a hypodermatic syringe. There was no ulceration. A moderately large number of colonies developed, among which was a fair proportion of colonies of the Klebs-Löffler bacillus. This, when inoculated into a guinea-pig, caused its death in seven and a half days. The animal weighed 230 gms., and received .2 c. c. of a twenty-four-hour bouillon culture of the second generation. At the autopsy of the animal dense induration and exudation in the tissues about the point of inoculation were found, together with lymphadenitis and some edema of the lungs. The spleen was large and soft. The suprarenals normal. The bacillus was recovered from the seat of inoculation, but from nowhere else.

CASE XVII. Unsuspected diphtheria. Autopsy by Dr. Wentworth on the body of a child.

The child had been wearing a trecheotomy tube for some two months, in consequence of an operation on the larynx for a new growth. Death occurred rather suddenly after a slight rise of temperature lasting about three days. The organs were brought to the laboratory for examination. Diphtheritic membrane was found in the trachea about the bifurcation. No broncho-pneumonia. A culture from this showed the presence of Klebs-Löffler bacilli and streptococci. No animal inoculations were made.

The striking thing about the Klebs-Löffler bacilli obtained in these cases is the large proportion of mildly virulent or non-virulent forms among them. Out of 12 cases in which the virulence has been tested, three have yielded bacilli of little or no pathogenic effect on the animals, and in three other cases the guinea-pigs inoculated from them have survived seven and a half days and longer. It may therefore be said that a mild degree of virulence, or none at all, has been observed in 50 per cent. of the organisms so obtained which have been tested.

These results are in accord with the experience of others, as noted in the first part of this section. Whether this lack of virulence of the bacillus is due to attenuation by long-continued residence away from its normal habitation, the air-passages, future study may decide.

From a consideration of certain of the above cases, we think that we are justified in holding that any excoriated or ulcerated surface on the body of a diphtheria patient will usually be found to be infected with the bacillus of that disease.

V.

On the morphology and biology of the Klebs-Löffler

The Klebs-Löffler bacillus in its morphology is the most characteristic and at the same time the most variable organism known to bacteriologists. As has and in litmus bouillon, which latter was reddened. best been shown by Abbott,34, 96 its morphology varies

markedly with the medium upon which it is grown, so that the bacilli from a blood-serum culture will have little resemblance in form to their descendants grow-

ing on an agar culture.

The bacilli from bouillon cultures are also different in morphology from these. Its microscopic appearance, when taken from a blood-serum culture and stained with Löffler's methylene-blue, is so characteristic that the practised eye can identify the organism by this alone. The gross appearances of the same culture are also of importance, though less character-

In our work we have based the recognition of the Klebs-Löffler bacillus mainly upon its macroscopic and microscopic peculiarities when growing on this medium and, in most cases, in bouillon as well.

After a large experience in the study of the morphology of the Klebs-Löffler bacillus under these conditions, we think that at least two forms of it may be One of these is the more common, and is recognized. distinguished by being a more or less segmented rod with intensely staining ends and perhaps one or two sharply defined intensely staining areas between. The other form is much longer and much more segmented, often somewhat constricted at the middle and gently swelling toward either end, one of which may be somewhat thicker than the other. This long form presents usually two slight curves. Aside from its greater length, it is also distinguished from the shorter form by not commonly presenting the sharply defined, deeply staining points in its protoplasm; but it is irregularly segmented, each segment staining fairly deeply and uniformly, and being separated from the next by a narrow, faintly-stained interval.

We have satisfied ourselves that these long forms are a distinct type of the bacillus, and are not the product of special conditions. They have occurred only in a small proportion of the cases. This form does not

change in successive cultures.

The existence of the different forms of the Klebs-Löffler bacillus has been noted by others. Martin 85 recognizes three — a short, a medium and a long form, and claims that there is definite relation between the severity of the case and the form or type of bacillus found in it. In our cases, however, we have not made out any constant association of either one of the two forms alluded to, with either mild or severe cases of diphtheria. Moreover, we have not observed any constant differences between these two forms as to their virulence towards guinea-pigs.

As to the much-mooted question of the pseudo-diphtheritic bacillus, we are of the opinion of Roux and Yersin, Abbott 87 and others, that in many instances the organism to which this name has been applied is nothing but a non-virulent form of the Klebs-Löffler bacillus. The work of these investigators and others, as well as our own results, shows that there are Klebs-Löffler bacilli which are not virulent towards guineapigs, but which are otherwise identical with virulent bacilli. This is not surprising in view of what we know of the great variation of other bacteria in their effects upon animals.

These non-virulent forms of the diphtheria bacillus seem to have been called pseudo-diphtheria bacilli by some writers, owing to the apparently deeply rooted conviction that all true Klebs-Löffler bacilli are virulent towards guinea-pigs, which is not true. The term "pseudo" should no more be applied to a non-virulent

diphtheria bacillus than to a non-virulent specimen of the frequently deadly staphylococcus pyogenes aureus.

In addition to these non-virulent forms of the true Klebs-Löffler bacillus, v. Hofman, Zarniko, Escherich 2 and others have described more or less clearly other non-virulent bacilli which resemble the Klebs-Löffler bacillus very much, and yet differ from it in certain respects. These they have also named "pseudodiphtheria" bacilli. In the course of our studies on diphtheria and other pathological processes, we have not infrequently met with organisms of this character; but their morphological and cultural peculiarities sufficed after careful study to exclude them from consideration. We consider that these and the so-called pseudo-diphtheria bacilli of Escherich and others have nothing more to do with the causation of diphtheria than scores of other bacilli which may be found in the pharynx.

In conclusion, a point in the biology of the Klebs-Löffler bacillus deserves attention. As is well known, the diphtheria bacillus in its growth in neutral or slightly alkaline bouillon, produces an acid reaction in the medium. This has been regarded by some writers as one of the characteristics by which it may by distinguished from the so-called "pseudo-diphtheria" Escherich,² moreover, considers that the production of the acid reaction, as shown by the changing of the violet color of the litmus-sugar bouillon to a red, is a reliable sign of virulence in the culture. He has recently stated that he has never seen an instance where an acid-forming culture has failed to kill This has not been our experience, for we the animal. have tested the acid production by the bacilli of most of our cases in the same way that Escherich did. We have found that the bacilli from all sources which have shown little or no virulence, have all without exception turned the litmus bouillon red. These cases which have furnished organisms of little or no virulence have been 21 in number, in 20 of which the culture used for testing the acid production was also used for inoculation. We cannot, therefore, agree with Escherich as to the significance of a reddening of the litmus bouillon cultures.

Lastly, it may be said that we have never observed a satisfactory instance of a change of the red color of the bouillon back again to violet or blue in any of the large number of bouillon cultures which we have kept for a long time. This is surprising in view of the results of others, who have found that the acid reaction which first appears, later gives place to an alkaline reaction, so that we should expect to have the color of the litmus change accordingly

All of the studies contained in this paper have been carried on under the direction of Professor Councilman of the Harvard Medical School, to whom the writer is under many obligations for good suggestions and active interest in the work.

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WHAT CASES SHALL THE MEDICAL EXAMI-NER "VIEW "?1

BY J. A. MEAD, M.D., OF WATERTOWN.

ALL civilized communities have taken away from the individual the right to punish wrong done him, and, in order that the guilty may be more surely punished, and the innocent not unjustly suspected, have established a complicated legal machine that without prejudice or haste shall deal out justice to all. Having thus replaced the rights of the individual, this system must justify its existence by demonstrating its ability to punish the guilty, and to protect the innocent better than did the system it supplanted.

The coroner system, from inherent defects, was unable to do this in a satisfactory manner, and, losing the respect of the community, was abolished. Out of the ruins of this discredited system sprang the medical examiner, who is an important factor in the legal machinery that seeks to detect and punish the criminal. If the medical examiner is to escape the fate of the coroner, he must avoid the mistakes of his predecessor, and prove to the people of the State that his actions are wise and discreet.

I find on inquiring of different medical examiners, representing each county in the State, that there is a decided lack of uniformity in their answers to the question that heads this paper. It seems to me of great importance that this Society should answer this question as definitely as possible, and that the combined wisdom of the members thus expressed should be a proper guide of action for the individual members.

The law under which the medical examiner acts provides that he shall view the "dead bodies of such

¹ Read at the Annual Meeting of the Massachusetts Medico-Legal Society, June 12, 1894.

persons only as are supposed to have come to their death by violence," and that, if upon a view and examination, he is convinced that death was due to violence, he shall set in motion the legal machinery that shall protect the innocent and punish the guilty. It is his early appearance in a legal case that gives to the medical examiner his great importance; and, as the character of the harvest depends upon the quality of the seed, so the result of a legal trial may depend upon the wisdom of the medical examiner. It is his duty to first discover upon and around the body of the deceased the signs of violence that, read aright, give the correct clue to the legal authorities. This evidence is often fleeting, and if not observed early, or if it receive the wrong interpretation, the whole course of justice in this particular case is changed, and the medical-examiner system receives the blame that should attach to the individual.

The office of medical examiner, while affording members of our profession opportunities for scientific observation and research, was created to render the detection and punishment of crime more certain and effectual. It is with this idea in mind that we must attempt the solution of the question that this paper is discussing.

The phrase, "supposed to have come to his death by violence," is very indefinite and elastic; it wisely leaves the medical examiner's field of action unfenced and uncircumscribed. It does not say upon whose supposition the examiner shall act, nor does it limit his action to those cases that are known to be due to violence; in fact, he is to decide this very point by his examination.

The only discussion of this question that I find in the excellent "Transactions" of this Society is the paper by its first president, the late Dr. Hosmer. In his able paper, he cites the following case to illustrate his interpretation of this question: "One morning, a police-officer requested me to give immediate attention to a case which had occurred five miles away. At much personal inconvenience I responded to the summons without delay. I found in the custody of the undertaker the body of an elderly man, who, early in the day, while in company with a friend, had died suddenly in the street. Careful interrogation failed to discover any suspicion of violence, that death was not a natural one, and also elicited the statement that the deceased had recently consulted a neighboring physician. The fact that the death had been sudden and public was assigned as the only reason for calling a medical examiner. I sought the physician who attended the deceased. On the demand of the instant, he could not furnish the information desired. He promised to investigate and report: in a very short time he wrote me as follows: 'Mr. marked stenosis of the mitral valve; was moderately comfortable with care. I learn that he had been drinking hard a day or two preceding death.' Such evidence as this fully confirmed me as to the correctness of the conclusion at which I had arrived, and upon which I had acted, when, in the presence of the dead body, I had expressed the opinion that the case did not come within the province of the medical exami-There was no duty prescribed by law that I could perform, there was no service that I was qualified to render; and, rendering none, I considered myself entitled to no compensation, and have never claimed any.'

From the above account it would seem that the policeman's suspicions were aroused by the suddenness and the unnaturalness of the death, and that he thought some one in authority should investigate the case; it seemed to him different from the usual form of natural deaths with which he was familiar, and he was compelled then, it seems to me, to conclude either that it was a violent death, or that it was caused by some natural agency with which he was unacquainted. He was in duty bound, therefore, to refer it to the man appointed by law, and fitted by professional attainments to settle this question. After a careful examination, and a use of the knowledge the possession of which caused him to be appointed to the position of medical examiner, Dr. Hosmer decided rightly that the death was due to natural causes; but wrongly, it seems to me, that it was not a proper case for the medical examiner to view.

Every medical examiner with much experience can recall similar cases in which the friends or relatives startled by the unusual manner of death, and influenced by that suspicion so useful in a case of crime, and so harmful in a case of a natural death, have accused some one of having given something injurious to the deceased; and this is particularly true if, as in this case, the deceased was a drinking-man. In such views, while the medical examiner contributes nothing toward the detection and punishment of the crime, he does, by establishing the innocence of the suspected person, contribute something towards the protection of the innocent, which is an important result of the law whose object is to protect the innocent, and to punish the guilty.

Dr. Hosmer restricted the duties of the examiner within too narrow limits, and, in subsequent talks with me on this subject, he modified his opinion very materially. He was influenced in writing this paper by the desire that the medical examiner should not fall into the error of the coroner by being too officious, and in seeing this point clearly he lost sight of the fact, it seems to me, that the examiner must, like the district attorney, investigate many cases that prove to be innocent. It is unwise to allow the police-officers or other persons to think that they can decide the cause of death in such cases as that quoted from Dr. Hosmer's paper. An early examination in all doubtful cases should be made by the medical examiner, because, by his training and experience, he is competent to dispel or confirm the doubt that surrounds the Not even the physician has the medical examiner's insight in such cases because it can only be acquired by constant experience and attention to the many problems that such cases present. Just as the practised prospector sees signs of hidden treasure which his experience enables him to locate better than the inexperienced observer, so the medical examiner ought to be able to detect signs of foul play and crime in some detail that would escape the ordinary practitioner. It is particularly in these cases of violence, in which the cause of death is so obscure and hidden that the ordinary observer would decide it to be natural, that the medical examiner does the finest work, and, in order that he may have every opportunity to successfully perform his duty, he should be the first to examine all cases of sudden death.

If from a legal point of view, the medical examiner does not have at present the right to view all cases of does not have at present the right to view all cases of a sudden death, and if it should seem after a careful society, June 12, 1894.

discussion of this subject that he should have this right, then it is the duty of this Society to ask that the law be amended. Such an amendment will make the safeguards of society stronger and more effectual, and cause the people to have an increased respect for the law that gives them so many proofs of its efficiency and fitness.

COMMENTS ON A CASE OF HOMICIDE.1

BY A. H. HODGDON, M.D., OF DEDHAM.

Mary E. was an unmarried woman of seventy years who had resided upon a small farm in a remote portion of the town of Dedham.

She had formerly been a school-teacher, and was a person of fair education and much respected. For a year before her death, a young German named Hoffman had lived with her, and at her request had procured a second German from Boston to perform some laborious work. A few days after this, on Hoffman's return to the place late in the afternoon, both Miss E. and the second German were missing. Subsequent search revealed the dead body of Miss E. doubled up in a small closet and stiff in rigor mortis. There were no marks of a struggle in the house, and from the appearance of the beds and table, it was evident that Miss E. had met her death some time after early morning.

A superficial examination of the body showed fingermarks about the throat and blood on the floor and on

the clothing about the genitals.

An autopsy on the next day revealed the following: Rigor mortis still present. The labia minora presented on the left side extensive ecchymoses on their inner surface, varying from one-half an inch to one inch in diameter, and on the right side a distinct ecchymosis the size of a French pea. There was a discharge of blood from the vagina and distinct laceration of the fourchette on the posterior portion of the vagina to the extent of one inch. The chest, and especially the upper portion thereof, presented purplish discolorations, marked here and there frequently by very dark purple spots somewhat elevated, which on section were found to be effusions of blood into the true skin. This same condition appeared on the face. The tongue was slightly protruded and held between the closed teeth. The mouth contained much vomitus. On the removal of the scalp there was found evidence of frequent blows upon the head, but no fracture of the skull was discovered. The tissues of and about the trachea showed distinct effusion of blood. Both lungs were engorged with blood, and the bronchi contained partly digested food, as did also the larynx, trachea and esophagus.

The fluid removed from the vagina was carefully examined under the microscope, and was found to con-

tain no spermatozoa.

The cause of death was certified to be suffocation induced by throttling, and by inhalation into the respiratory tract of food thrown up by the stomach; and it was also certified that an attempt had been made to commit rape, an entrance into the vagina having been made.

At this point the case came to a standstill for over two years, when at last, the supposed author of this



crime having been betrayed to the police through the offer of a reward, he was taken, indicted and tried.

It seemed probable that the murderer had throttled and stunned his victim first, and then, while attempting to commit rape, had so pressed on her abdomen and stomach, as to force the contents of the latter up into the pharynx and mouth. Yet at the beginning of the trial it was found that a former district attorney had so drawn the indictment that the charge of murder during an attempt at rape had not been distinctly made, and owing to this, a conviction of murder in the second degree only was obtained. Undoubtedly rape was the prime object of the assault, and that, too, when the woman assaulted was seventy years old; and the question was asked by the defence whether atrophy and shrinkage of the parts would not render connection impossible. The autopsy, however, showed a fairly patulous vagina. The absence of semen probably showed want of emission. How long semen would withstand putrefactive changes while still in the vagina seems to be still undetermined, as there appears to be no record of time in such cases. While dry in stains on clothing, they are said to have been detected by Bayard after six years, and by Roussin after eighteen years. The defence held that simple ocular inspection was not sufficient to determine whether the tear in the fourchette was recent or not, and their experts contended that the tear should have been excised and the sections submitted to the microscope. punctated effusions and ecchymoses on which Tardieu has laid so much stress were very marked over the chest and face; and these, he asserts, although they may appear in cases of suffocation from compression of the chest wall, are best marked and most characteristic in death by strangulation.

The medical evidence in this case was conclusive, and no real effort was made to gainsay it. Although the remaining evidence was largely circumstantial, it was sufficient to convict the prisoner of murder in the second degree, and he was sentenced to State's prison for life, escaping a death sentence undoubtedly very largely from the flaw in the indictment above alluded to.

largely from the flaw in the indictment above alluded to.

The other occurrence in this trial ought, it seems to me, to be spoken of here. In this trial, and at one other which occurred shortly after, a regularly appointed medical examiner of this State appeared as an expert for the defence, engaged by the defence for this purpose and in one case, at least, paid by the defendant. Such action occasioned much comment and surprise at the time, and the propriety of such conduct was at once doubted. The question of our status as medical examiners with reference to the State arose. Are we State officials now and for all the while we hold our commissions? or is our official life an intermittent one that can be taken up and laid down as duty or emergency may demand? Are we counsellors looking with a partial eye at each case? or are we true experts, seeing each case with an impartial eye? The statute under which we are appointed simply says that the Governor "shall nominate and by and with the advise and the consent of the Council, shall appoint in each county able and discreet men, trained in the science of medicine, to be medical examiners in such county"; it then goes on to define our duties, giving no indication, however, bearing on the subject in hand. A former attorney-general of this State once spoke in my hearing with a great deal of warmth on

aminer appearing against the government, the medical examiner would not hold office long. Upon just what ground he stood, I could not see, unless he should persuade the Governor and Council that such conduct was sufficient cause for removal. That the lawyers do not agree upon this matter, any more than on many others, is shown by the letters from two district attorneys of this State lately received by me, and which I will now read:

DEAR SIR: — I do not know what the feeling of other district attorneys may be, but personally I can see no objection to a medical examiner testifying either for the Commonwealth or the defendant in a criminal trial. It seems to me that if the expert had his true position in litigation, such a question would hardly arise.

However, even now, although we are accustomed to consider experts as a species of counsel, sometimes fairly so, I am not prepared to say that the medical examiner is under a retainer to the Commonwealth. I see no objection to his assisting in discovering and declaring the truth in any disputed case, whether he do so as a witness for the Commonwealth or the defendant.

I am very truly yours, W. H. Moody.

On the other side is the following:

DEAR SIR: — I think that medical examiners should not appear as experts against the Commonwealth in other districts than their own. They are officers of the Commonwealth. There seems to me to be the same impropriety in a medical examiner so doing that there would be in a district attorney defending a criminal outside his district.

Very truly yours,

JOHN A. AIKEN.

I am inclined to side with the latter view, and must confess that I have always considered myself a State officer, but not necessarily a "species of counsel." For us to appear on the side of the defence in opposition to another medical examiner, weakens our position and at once lowers us to a "species of counsel." The whole matter is one of opinion, but to me it has seemed to show a lack of propriety and good form to stand with the defence and opposed to the Commonwealth in such cases.

SUICIDE OR HOMICIDE? A CASE FOR MEDICO-LEGAL DIAGNOSIS.¹

BY C. B. HOLDEN, M.D., OF ATTLEBOROUGH.

THE case to which I will call your attention does not perhaps invite you to assist me in deciding if it be one of suicide or homicide, as the title states, so much as to ask for an opinion as to the manner in which the several wounds found on the body were received, and as to whether they were all post-mortem, or antemortem.

The subject, Patrick McCarthy, of North Attleborough, an old man of sixty-five years, living peacefully with an unmarried son and daughter, a man possessed of no property, but a very useful member of the household, and of good habits, left his home in cheerful spirits after eating breakfast, Saturday, the eighth day of July, 1898. His absence from dinner was unusual; and when he did not return for supper, search was immediately begun for him. He was last seen about 9 o'clock that forenoon, leaving a saloon which was situated about a quarter of a mile from his

this matter, saying that if he knew of a medical exSociety, June 12, 1894.

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residence, where he had drunk twice of ale. He lived in a thickly settled portion of the town, was well known, and because of his kindly manners was a general favorite.

The next morning, two men, while rowing in a boat on a pond about a quarter of a mile from where McCarthy lived, and about the same distance from the saloon, saw, perhaps twenty feet from the shore, the gray head of a man apparently floating just beneath the surface of the water. The body was taken to the shore, identified as that of McCarthy's, and I was called to view it.

The posture of the body was that of semi-sitting, and it was properly clothed. The head, face and neck were covered with cuts and bruises. The most striking features were the loss of the right ear, a large denuded surface on the right side of the neck which exposed the opened external jugular vein, and the absence of all blood from the clothing.

An autopsy was made that afternoon and the following facts were ascertained: The body was that of a man well nourished, rigor-mortis was present, and cadaveric hypostasis was marked on the face and the upper part of the chest. The palms and the hands were blanched and wrinkled, and crepitation was noticed by pressure applied to the right side of the chest down as far as the nipple. As was stated, the neck and face on the right side were the seat of many injuries. Beginning with the nose, on the right side there was a cut one inch long, the tip of the nose was denuded of skin and a V-shaped cut extended through the cartilage separating it from the bone. Just below the right eye was a scratch three-fourths of an inch There was a bruise on the cheek one inch in diameter; three other smaller bruises on the cheek, from which the skin was partially denuded. The right ear was separated from the side of the head leaving a jagged irregular edge, the auditory canal being filled with clotted blood; below the ear and in front was a denuded surface two and one-half by one and one-half inches wide, the lower border irregular in outline; in this wound the opened external jugular vein was seen. Behind and slightly above the right ear was a scalp wound one and one-half inches in diameter; below and behind this was a cut two inches long that did not go through the scalp; leading into this from above was a cut one inch long and from below a cut an inch and a half long. Above and three inches behind the right ear was a cut three inches long extending through the scalp, and in this region were several other cuts and scratches from two to three inches long.

Passing to the internal examination of the body, the lungs, deeply pigmented, were prominent and did not collapse after the sternum was removed; both were firmly attached to the thoracic walls, the pleural cavi-ties being nearly obliterated. On applying sufficient force to remove the lungs much water tinged with blood escaped into the thoracic cavity. A ligature was applied so as to include the trachea and the large blood-vessels, and the lungs and heart were found to float in water. Pressure applied to the cut surface of the lungs caused the escape of a watery fluid, in fact, the lungs seemed to be saturated with water. The heart, opened under water, showed the escape of bubbles of air or gas; the left side of the heart was nearly empty, while the right side was filled with soft clots.

contained about four fluid-ounces of light-brownish colored fluid.

On removing the scalp, areas of discoloration were noticed beneath the external wounds. The brain was normal and the skull was not fractured.

The wounds found on the face and neck and described as cuts and bruises were peculiar in appearance. The cuts, with one or two exceptions, would perhaps more properly be described as deep scratches. The denuded surface on the neck was deeper at its upper portion, gradually growing more shallow until at its lower border the line was irregularly notched.

A second visit to the pond in which the body was found and a more careful examination of the premises. revealed agencies that could possibly have caused some of the injuries noted. Along the shore of the pond, about fifty feet from where the body was found, was a short section of barbed-wire fence several lengths of which were submerged. Although there was no current in the pond, it is perhaps possible that the face of the body came in contact with the barbed wire causing the injuries. This may have been the case, although one would suppose that if the body had been in contact with the fence a sufficient length of time to cause the injuries, the clothing would have become attached The bottom of the pond is composed of soft mud, there being no stumps of trees or large stones anywhere in the vicinity. The other injuries might have been due to the body being struck by a row-boat, although it seems hardly credible that an ear could be severed from the body in such a manner.

An inquest was held but no decision has been made by the judge. The medical evidence was to the effect that the cause of death was drowning, and that the wounds were probably received after death in some manner unknown.

WHAT SHALL WE DO WITH TENDER AND PAINFUL STUMPS AFTER LAPAROTOMY?

BY BYRON ROBINSON, CHICAGO.

What shall we do with painful and tender stumps after laparotomy, has no doubt puzzled many gynecologists. In one of my series of one hundred laparotomies, three patients bitterly complained of tenderness, pain, and a dragging, sickening sensation on active exercise. Careful vaginal examination soon convinced me that it was in the left stump of the broad ligament. The painful stump had periods of exacerbation. It would remain relatively quiet for some time, and the patient would only complain of it as a tender spot, or a little increased ache toward night after the day's exercise. But the sense of a tender locality in the pelvis would not entirely disappear. Only by slow, careful and gentle manipulation can one locate the stump in times of quietude. At the times of exacerbation the tissue around the stump, or especially a large part of the pelvis, will be so tender that one cannot localize any distinct point. There may be occasionally slight edema and thickening, but general local tenderness and pain is the general symptom. One patient complained of burning in the whole lower abdomen and pelvis. In this special series of one hundred cases the neurotic stumps appeared all (three) on the left side. This may be owing to the clinical observation that the left appendage is affected seven The abdominal organs were normal; the stomach times out of ten. Again, the blood-vessels and nerves are more in quantity on the left side. The veins do not return with the same facility as they do on the right. The nature of the cases may be better understood by a short presentation of them.

CASE I was single, twenty-eight, slight build, one hundred pounds, old hip-joint trouble. She was delicate in appearance, and in a neurotic, sensitive condition. She had had salpingitis and ovaritis for about two years. The left appendage was found thickened and tender, especially more than the right. In laparotomy I removed both appendages, tied the tubes with twisted silk (No. 12), and closed the abdomen without She recovered well. Some three months later I was called for rectal trouble, or rather pain in the pelvis with mucal discharges from the rectum. She had severe spells of pain in the pelvis. At first I could not locate any tender point or stump by the most careful examination, though she was slightly tender on the left side. I called Dr. Furguson, who excluded the hip-joint from any guilt in the trouble. I then called Dr. Bacon to pronounce whether any rectal disease existed, but he said the rectum was guilty of nothing. After the joint and rectal specialists had found nothing in their fields, I kept up periodic examination; and some six months after the operation the trouble could be quite distinctly located in the left stump of the broad ligament. The irritation on the stump is reflected on the rectal nerves, and to the patient the disease appears to be in the rectum. She is unable to work, and has an exacerbation of the pelvic pain every three to six weeks, at which time considerable mucal discharge arises from the rectum. All wounds are perfectly healed.

Case II from this series of one hundred sections, occurred in a married woman of thirty-two. She had no doubt been infected by her husband seven years before at marriage. She was neurotic, pale and irritable. She had dysmenorrhea, and was generally run down. In laparotomy I allowed Dr. Sessions, the interne at the Woman's Hospital, to tie the ligature around the appendages after I had enucleated them from a bed of severe inflammatory adhesions. No. 12 silk was used. Six weeks after the operation she developed pain on the left side and since, that is for eight months, she has been a severe sufferer. In fact, she says now she suffers more than before the operation. The tenderness in the left side is easily localized, and to move it causes agony, especially at times of exacerbation, for she has times of relatively ease and quiet. Her wound healed perfectly with no drain-tube.

Case III was in a married woman of thirty-six, who had been ill for some two years. In laparotomy both appendages were removed, tied off with No. 12 silk, and the abdomen closed with no drain. She developed emphysema in the right side, the size of a saucer, just above the ilium. She had also pleuritis on the right side. Recovery was slow and she complained of much pain for a month on the side. Three mouths after, she visited my office, when I found that the left stump had a tender spot on it. She gained flesh, but the pain in the left stump is very severe on slight pressure. Her wounds healed perfectly. On digital examination previous to the operation the left appendage was the more diseased.

In this series of one hundred sections three distinct cases arose of painful and tender stumps. They were all on the left side. In all, the left appendage was

more diseased than the right. The silk used was No. 12, braided and well boiled. They were all of a neurotic disposition, debilitated by long-continued disease. The diseased, painful and tender stump began to be localized in the earliest case six weeks after the operation. The cases are now continuing six to ten months old. No drain-tube was used, and the wounds all healed perfectly. It is likely that one or all will require a second operation.

The question now arises, How can we avoid a painful and tender stump after section? I have tried kangaroo tendon in the abdomen, but not long enough to secure pronounced views on the matter. It is not yet fully understood what produces a neuroma on 'the end of a ligated stump. It does not appear to be merely infected wounds. It does appear to occur in neurotic, debilitated patients.

In my clinic come patients from other gynecologists, who suffer from painful and tender stumps. Such patients are neurotic, but they may have been made neurotic by continued pain and irritation in the stumps.

It would no doubt be better, if it were possible, to isolate the arteries and ligate them alone.

The occurrence of a painful and tender stump in a neurotic patient is a severe blow to surgery, as such patients give unlimited scathing criticism to operations. It makes them everlasting foes to surgery.

Our suture materials and our methods of application may yet be changed for the better.

Medical Progress.

RECENT PROGRESS IN GYNECOLOGY.

BY F. H. DAVENPORT, M.D.,
Instructor in Gynecology, Harvard Medical School.

TREATMENT OF THE STUMP AFTER MYOTOMY.

MANGIAGALLI¹ in a paper read before the International Congress at Rome discusses the various methods of operating, and comes to the following conclusious:

- (1) The influence of the treatment of the stump on the mortality in cases of hysterectomy has been exaggerated.
- (2) Other general and local conditions deserve much more attention; as the intra ligamentous development of the tumors, which gives a bad prognosis.
- drain-tube.

 Case III was in a married woman of thirty-six, who had been ill for some two years. In laparotomy both appendages were removed, tied off with No. 12 silk, and the abdomen closed with no drain. She developed emphysema in the right side, the size of a saucer, just above the ilium. She had also pleuritis on the right side. Recovery was slow and she (3) In order to be able to estimate the results of all methods of myotomy, it is necessary to divide fibromata into (a) intraligamentous, (b) subserous, submucous and interstitial. The second class gives with either an extra- or intra-peritoneal treatment of the stump a mortality of about five per cent., which can with difficulty be improved by total extirpation (abdominal or abdomino-vaginal).
 - (4) The intraperitoneal treatment of the stump must with few exceptions displace the extraperitoneal, since it gives the same mortality with less danger.
 - (5) The Zweifel method is to be preferred on account of its simplicity, and the possibility of rapid performance. Mangiagalli covers the elastic ligature with the dissected peritoneal flaps, without removing it as Zweifel does.
 - (6) The intraligamentous fibroids show at present a

 1 Cent. für Gyn., No. 16, 1894.

comparatively high rate of mortality, and as yet there is no special method of operating which has the preference though the total extirpation per abdomen is the one which affords the best chance.

(7) Vaginal hysterectomy is calculated by morcellement and the clamp method to widen the indications for myotomy; still it cannot be employed in all cases, so cannot be compared with other methods. It is a good substitute for castration in those cases where this is indicated.

Jacobs, in the same discussion, says that the ideal operation is the complete extirpation, body and neck, so as to avoid leaving a stump, to lessen shock, and to diminish the amount of blood lost which is important with patients who are already anemic. He employs the abdominal method as follows: (1) Opening of both vaginal cul-de-sacs, and clamping of the uterine arteries. (2) Laparotomy. The tumor is lifted out, both broad ligaments clamped with specially constructed clamps. The uterus is then removed through the abdominal wound, after the broad ligaments have been cut. The abdominal wound is then closed, and the vagina filled with iodoform gauze.

Péan refers to the old idea, that very large tumors, or those which immediately threaten life should be operated on, and says that having recognized that the most of these tumors lead to complications which threaten life or render it miserable, his principle is to remove them while small. His experience is summed up as follows: As soon as a fibroma of the uterine body is recognized, it should be removed by the abdominal method without regard to its situation, provided it is of good size, using the elastic ligature, clamps and morcellement; if of small size, by the vaginal method. He refers to one class of tumors which develop in the posterior wall of the uterus and so press down the posterior cul-de-sac, and displace the neck, that it is impossible to remove them by the vagina. These he removes by an incision laterally through the perineum and the recto-vaginal septum up to the peritoneum. His method should be read in the original.

Laudau's conclusions are as follows:

(1) For tumors which do not reach higher than the umbilicus the best operation is hysterectomy by means of piecemeal enucleation by the vagina.

(2) In the case of larger tumors, laparotomy, and rapid enucleation of the single or multiple fibroids, and extirpation per vaginam of the stump.

(3) It is important not to close the peritoneal cavity entirely, and with the use of clamps this is fortunately impossible.

MASSAGE BY THE THURE-BRANDT METHOD.

Jentzer² gives the results of his treatment of 145 gynecological cases by the Thure-Brandt method of massage, as follows:

- (1) Two cases of prolapse with elongation of the neck, in women twenty-three and twenty-nine years of age cured in twenty-three and thirty-five days, and since then no recurrence.
- (2) Fifty-seven cases of subinvolution after childbirth or abortion without retention of placenta. All cured in from twelve days to two months.
- (3) Twenty-two cases of parametritis resulted in cure after from two to six months' treatment.
 - (4) Nineteen retroversions, only two cures. The
 - ² Centralblatt für Gyn., No. 18, 1894.

author is inclined to think that his poor success in comparison with the results attained by Thure-Brandt, is due to his lack of experience with the method. He adds, however, that in fifteen cases there were firm adhesions which disappeared under massage, and that in consequence the patients were subjectively better, though the retroversion persisted.

(5) Eleven cases of weakness of the neck of the bladder following repeated confinements. Treatment lasted from one to four weeks, and resulted in cure in eight cases, improvement in one, and no change in two.

(6) Seven cases of hydrosalpinx, of which four were cured, and three not.

(7) Twenty-seven cases of menorrhagia, of which the majority occurred during the menopause. Eight of the number were curetted. There were twenty-three cures, two cases were improved, and two showed no result.

The author speaks in favor of employing massage during menstruation. He refers to the opinion of Auvard that the catamenia are a contraindication because massage would be apt to increase the flow. Brandt maintains the opposite and Jentzer's experience confirms the latter opinion. He has often found that obstinate adhesions are more easily separated at that time.

His conclusions are as follows:

- (1) Massage during menstruation must be very gentle, and the sittings should be short.
- (2) When so carried out, massage has an effect upon the vasa constrictoria, and prevents blood stasis.
- (3) The movements for relieving congestion should always be employed during the sickness and for a short time only.
- (4) Massage at this time has often the effect of relieving pain.
- (5) It never, if carried out as explained, causes inflammation.
- (6) If massage treatment is suspended during the catamenia, it prolongs the time necessary for cure.

(7) Metrorrhagia is benefited by massage.
(8) Pelvic exudates are more quickly absorbed.

(8) Pelvic exudates are more quickly absorbed.(9) Adhesions disappear quicker and more easily.

[Massage as advocated for the cure of so large a range of gynecological affections, seems to us open to so grave objections, that its employment cannot be wisely recommended to practitioners generally. It will certainly not tend to lessen the unfavorable opinion we have formed of it, to hear it advised that it should be practised during menstruation. We are of the opinion that neither American physicians would advise it nor American patients would be willing to submit to it for the sake of the slight benefits which are claimed to follow its use.— Rep.]

CONSERVATIVE TREATMENT OF TUBAL AFFECTIONS.

Vuillet * speaks warmly for conservatism in the treatment of pyosalpiux, and hydrosalpiux, and cites two cases of pregnancy following such procedures. His conclusions are as follows:

- (1) The majority of cases of purulent or serous collections in the tubes whether of one or both sides, can be cured by conservative methods. These consist either in simple puncture, or puncture with washing out, or puncture followed by incision and drainage.
- (2) These methods are not dangerous in careful ³ Cent. fur Gyn., No. 16, 1894.

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hands and with the employment of thorough antisepsis, cure occurs without complications.

(3) Two cases of pregnancy after cure by this method show that the tubes, even though pus has been present, may resume their function.

(4) It is, therefore, the duty of gynecologists to employ this conservative method before deciding to remove the tubes and ovaries. In most cases these organs can be preserved and the women not doomed to sterility.

THE CURATIVE EFFECT OF BATHS IN DISEASES OF WOMEN.4

The treatment by baths plays an important part in gynecology, especially in the class of cases characterized by exudates of the pelvic peritoneum. What is ordinarily meant by the term exudite, may be divided from a pathologico anatomical standpoint into two forms: (1) the true serous, fibrinous or purulent collections in the pelvic structures; and (2) the periand para-metric connective-tissue bands and cicatrices, which must be regarded as the results of the other group. While the treatment of the first class of cases by balneotherapy shows most brilliant results, even an absolute restitutio ad integrum, in the case of adhesions and chronic thickenings, the effect is merely symptomatic, reducing sensitiveness, and relieving pain, and favoring general improvement.

According to Dührssen these cicatrices do not in themselves cause pain, but favor the establishment of endometritis which is relieved by the baths. To be sure the endometritis can be ordinarily more easily cured by curetting and cauterization, hence these measures should be tried before a course of baths.

Permanent results are not to be expected in cases of (1) retroflexion of the uterus with adhesions, (2) fixation of one or both ovaries by perioophoritic bands, (3) collections of pus in tubes or ovaries, as often occurs in connection with gonorrheal infection. Appropriate treatment of the third class is laparotomy with removal of the diseased organs, of the first and second, forcible separation of the uterine and ovarian adhesions, and consequent increased mobility of the organs, under anesthesia. The movable uterus is then replaced, and according to Schultze held by a pessary. Dührssen, on the contrary, prefers vaginal fixation, and later massage, as advised by Chrobak. The mobility of the ovary should be maintained by massage after the method of Thure-Brandt.

It is, therefore, essential in order to select appropriate cases for treatment by baths in the first place to establish a correct diagnosis.

ASCITES, ESPECIALLY FROM A GYNECOLOGICAL STANDPOINT.

Litten 5 says that the diagnosis of ascites rests mainly upon the configuration of the abdomen, the form of the dulness, the fluctuation, and the variation in percussion on change of position. A point of very important diagnostic value is the etiology, particularly the question whether the vena cava inferior, or the portal vein is the seat of the disease. If the first is the case, there is swelling of the extremities, of the abdominal walls, and of the external genital organs; if the second, these are wanting, but the veins of the ab-This last occurs in disdomen become prominent.

eases of the respiratory and circulatory apparatus, the first in affections of the liver, kidneys and peritoneum.

Ascites may be confounded with dilatation of stomach and bowels, though this occurs seldom. The most common condition for which it may be mistaken is a monocyst of the ovary, but only when it is not very large, and does not lie everywhere against the abdominal wall, or is grown to it, in which case there will be no difference in the percussion note on change of position. There is no sure point of differential diagnosis. The examination of the fluid sometimes gives important information; if it contains bile, or becomes blue on exposure to the air, or if chylous, it is ascites; if it coagulates soon after removal, that speaks for a dermoid cyst of the ovary. Urea, leucin or sugar are in favor of ascites, paralbumin of an ovarian tumor. Specific gravity has no importance, and the cells are usually too much changed to have any diagnostic valne.

A good method of differential diagnosis is the examination of the fluid by means of centrifugal force. When applied to ascitic fluid, even though perfectly clear, there remains in the reservoir of the tube of the machine a small deposit of blood which resembles a spot of sealing-wax. This was never observed in the fluid from an ovarian tumor.

Especially difficult of diagnosis are the cases where there occur both ascites and ovarian growths, especially the small ones which cannot be palpated, such as papillomata of the surface of the ovary. In such case an exploratory incision is to be made.

THE RELATION OF GASTRO-INTESTINAL AFFECTIONS TO DISRASES OF THE FEMALE GENITAL ORGANS.

Theilhaber gives details of 45 patients who had been sent to him for gynecological examination by Dr. Crämer a specialist for diseases of the stomach and intestines. They all suffered from stomach disorders, 25 with nervous dyspepsia, 12 from atony of the stomach, 2 with catarrh of the stomach, 2 with chronic intestinal catarrh, and 4 with other affections.

The gynecological examination revealed absence of any abnormality in 4 cases; in 19, catarrhal endometritis, with more or less thickening of the parenchyms of the uterus; in 4, endometritis hemorrhagica; 10 cases of retroflexion and version of the uterus; 3 of oöphoritis; 2 parametritis; 1 of old puerperal parametritis; 1 of retroversion of the anteflexed uterus; and 1 of small ovarian tumor.

As regards the connection between the gynecological troubles, and the stomach and bowel affections, Theilhaber divides the cases into three groups. The first embraces those cases in which the gynecological condition is only a chance occurrence. In the second group belong those cases in which the gynecological disturbances are caused by the gastro-intestinal affec-Theilhaber mentions here especially cases in which metrorrhagia and dysmenorrhea are caused by constipation. In the third group the uterine condition is the cause of the stomach trouble.

Six of the patients with nervous dyspepsia suffered from retroflexion; in four of these the dyspepsia was cured by the reposition of the uterus; in two, not. Nervous dyspepsia and endometritis hemorrhagica existed in three cases. In two the digestive difficulties, which had existed for years, disappeared after curetting; one patient withdrew herself from treatment.

⁴ Address before the Balneological Congress, by Dührssen of Berlin. Cent. für Gyn., No. 24, 1894.
⁵ Deutsch. med. Woch., 1894, No. 8.

⁶ Münch. med. Woch., xl, 1893.

Of eleven cases of nervous dyspepsia and catarrhal endometritis, local treatment of the uterus had prompt effect in eight. Four cases of atony of the stomach which were associated with various local conditions were cured coincidently with the cure of the uterine conditions. Theilhaber concludes from his observations that in all cases of nervous dyspepsia, atony of the bowels, or of the stomach, hyperacidity, want of acidity, and periodical gastralgia, in women where for a long time a rational medicinal treatment has not been successful, a thorough gynecological examination should be made, especially when the patients complain of irregularities of menstruation, or leucorrhea. Still, though the gynecological treatment is important, it is often necessary that treatment of the stomach trouble should be also carried out.

Reports of Societies.

MASSACHUSETTS MEDICO-LEGAL SOCIETY.

F. W. DRAPEB, M.D., SECRETARY.

THE Society held its annual meeting June 12, 1894, in Boston, twenty-seven members present, and Dr. Z. B. Adams presiding.

The following officers were elected to serve during the ensuing year: President, Dr. Z. B. Adams; Vice-President, Dr. S. W. Abbott; Corresponding Secretary, Dr. B. H. Hartwell; Recording Secretary, Dr. F. W. Draper; Treasurer, Dr. A. E Paine.

Dr. J. A. MEAD presented a paper on the question, WHAT CASES SHALL THE MEDICAL EXAMINER "VIEW"? 1

Dr. HARTWELL, of Ayer, said that the question discussed in the paper read, had always been one of doubt. It had been his practice to take a middle ground between the two extremes, represented on the one hand by the rule not to see any case except those in which violence at the hands of another was the cause of the death, and on the other hand, by the rule laid down by the reader that the medical examiner should investigate cases of sudden death as well as cases of violence only. He had thought it best, if he erred at all, to err on the side of the Commonwealth. It would be impossible for the law to state what cases should be included. The medical examiners were appointed as "discreet" men, and much depended on their judgment and good sense. They were human, and to a certain extent selfish; and if they wished, acting for themselves, they might add to their bank account in performing their duties. The law provides that "when a medical examiner shall be notified that there is lying within his county the dead body of a person supposed to have come to his death by violence," etc. There is a great deal of latitude of meaning in the word "supposed" and in the word "notified." Any one may "notify." It had been his custom to make the fullest practicable inquiries before responding; and if the case was clearly not one in which unlawful violence was an element, he had not responded, but had saved expense to the State. He would view all bodies where there was any doubt in the matter, so that there should not later come up a question of neglect.

¹ See page 362 of the Journal.

There are many laws in the Commonwealth similar to the law concerning inquests. Most of the country places are under the jurisdiction, in minor matters, of district courts; but the selectmen of any town can have a justice appointed who shall have authority to issue warrants. There is one small town with such an officer, an estimable man, a lawyer and chairman of the board of selectmen, who recently issued ten warrants in a single affair, getting a dollar for each warrant. Two boys got drunk, assaulted some people in the town, broke into a house and stole, were arrested and locked up, and broke out. Five warrants were issued against each of those boys: one for getting drunk, another for assault and battery, a third for breaking and entering, a fourth for breaking out, and a fifth for larceny. If that case had been brought before the district court, two warrants would have been issued without expense.

In a similar way, medical examiners may err. Shall they make a "view" and get five, six, seven, or eight dollars from the county, or shall they not? It had been his habit, he said, to take a conservative course.

The law requires an inquest in all cases of fatal railroad accidents. Other classes of cases in which the medical examiner should act are these: fatal accidents to the employees of corporations or of individuals, and sudden deaths from natural causes or by suicide.

Dr. HURD, of Newburyport, said that the majority of sudden deaths in his vicinity were cases of drowning; and it had seemed to him that, even where there was no ground to suppose that any violence was used, these cases came within the jurisdiction of the medical examiner. For instance, a schooner was wrecked, and seven persons were drowned in attempting to reach shore in a boat. Now, as those bodies were successively washed ashore, the question came, What was the use of a medical examination? In the first place, the medical examiner could best manage the problem of identification, and, in the second place, he could give proper direction as to the burial of the bodies; he would thus fulfil a public duty, although there was no suspicion that any of the deaths were deaths from criminality, and it had seemed clear that, if there had been fifty of these bodies, instead of seven, to drift ashore, they would be proper cases for the medical examiner.

Another case cited presented a different problem. The body of a child was found in a lake. The circumstances of the drowning were known to be due to accident, and had been observed by witnesses who were unable to render help. In such an instance, ought the medical examiner to put the State to the expense of an examination? Every little while such a case occurs; and if the examiner goes in response to a summons, it takes several hours and some trouble; he can hardly afford to do the service gratuitously.

The impression is abroad, Dr. Hurd said, that in all cases of sudden death the medical examiner should attend. He did not know of any rule that could be laid down in such cases as to how far he was warranted in declining to respond to a summons under the belief that any examination was needless. The cases of people found dead in bed should always be investigated. Whether a charge should be made in any given case should be left to the discretion of the examiner; but he would be inclined to lay down the

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rule that in cases of accidental drowning it was proper for the medical examiner to attend and make a charge for his attendance.

DR. HOITT, of Marlborough, said the medical examiner was often called to cases outside his duty, because the public had imperfect ideas of the limits of that duty. In his district, he said, it often seemed to be the impression that the medical examiner was to settle all causes of death where a physician was not in attendance; or, even if he had been in attendance, in the event of a sudden death. He had been called, too, in cases of accidental drowning; and the people were indignant because he had expressed the belief that such affairs were not within his duty; and they were indignant, also, because the State would not employ a diver to search for a body drowned. He had investigated cases and had refrained from making any charge, believing the State would not uphold him. In one case, however, in which he had made an autopsy upon the body of a man found dead in his bedroom after a spree with suspicious characters, his fees for the service and those of his witnesses were in abevance for nearly a year, because in his report to the district attorney he had stated the ascertained cause of the death to be heart disease.

Dr. Hoitt suggested that, in order to avoid the embarrassments growing out of the present state of things, it would be better to pay a regular salary to all the medical examiners, proportioned according to the average number of cases investigated annually in the several districts.

DR. PRESEREY, of Taunton, commented on the popular misapprehension that a medical examiner, paid according to the fee system, was inclined to abuse the opportunities of his office by taking up cases outside his strict duty in order that he might profit pecuniarily. He deprecated this view as a discreditable and mercenary view, inherited from the corrupt coroner system. He had heard more criticism on the part of court officials to the effect that the medical examiners had not gone far enough in the direction of thoroughness than he had of the opposite kind, the tendency of the legal mind being to insist that in every case the duty of the examiner should be done to the fullest degree.

DR. JACK, of Melrose, mentioned the case of a drunkard who had died at his home while under treatment according to the Keeley system, and the question had arisen whether the remedies had had anything to do with his death. The conclusion was reached that the death was due to natural causes, and was so reported. A judge of the district court had asked, by letter, what was the need of a medical examiner if the death was due to natural causes? To this Dr. Jack had replied that it was the duty of the examiner to determine the very fact, that the death was not due to violence.

Dr. Jack quoted the facts of another case in which a man had been injured by the fall of a building, and had lived an hour after being rescued from the ruins, being meanwhile in the care of a surgeon. Though summoned to this case as a medical examiner, he had declined to respond, upon learning the facts.

DR. CUTTS, of Brookline, said he had formerly considered suicides as outside the limits of his duty as a medical examiner, but his present practice was to respond when summoned to such cases. It was not his custom to make any charge for investigating cases of sudden death by heart disease or other natural causes,

although he thought it would be a desirable change if authority were given to the medical examiners, or to some physician, to take official charge of such cases. It would be better to err upon the side of the Commonwealth's interests and make views, returning them with the proper charges, not for the sake of the fees but as evidence of duty done, leaving it to the county commissioners to disallow the fees if they thought fit.

DR. PRESBREY, replying to Dr. Cutts, said that the law already provided for the cases of sudden death from untural causes; for the local board of health had authority to appoint a medical agent to discharge the function alluded to, and if this officer in his investigation came upon suspicious appearances, he would naturally transfer farther inquiry to the medical examiner, who under such circumstances would not hesitate to act.

Dr. MUNSELL, of Harwich, said the whole matter of responding to calls appeared to be left to the discretion of the medical examiner; and he quoted with approval the advice which he had received from a former district attorney of his district, who later became attorney-general: "You had better make ninety-nine uncalled for views than to let the one hundredth go by." He described the unpleasant effects that would probably follow a hasty conclusion not to investigate a case, and said he thought it was worth the fee and mileage to quiet suspicions that would run through a neighborhood and cause discord and bad feeling over an undetermined case. He cited a case in his own recent experience which illustrated his position, wherein an accidental fall down some cellar stairs had, by neighborhood gossip, developed into a homicide in the popular view, and the suspicions and excitement thus engendered had been speedily quieted by the medical examiner's observations and conclusions, excluding unlawful violence from the affair.

DR. HOLDEN, of Attleborough, read a paper entitled SUICIDE OR HOMICIDE? A CASE FOR MEDICO-LEGAL DIAGNOSIS.¹

DR. PINKHAM, of Lynn, said that in the case reported the manner of the death, whether by suicide or homicide, was undetermined and indeterminable. It seemed incredible, one might say impossible, that a man intending to kill himself should make the number and kind of wounds observed. On the other hand, on the supposition that the wounds indicated homicide, their variety was extraordinary; one must suppose, in such a case, the use of one weapon and the resulting lesions would be similar in character. The real cause of the death was drowning, which might have been either suicidal or accidental.

Dr. Hodgdon, of Dedham, read a communication with the title,

COMMENTS ON A CASE OF HOMICIDE.2

DR. PRESBREY, of Taunton, said there were arguments on both sides of the question whether it was proper conduct on the part of a medical examiner to appear as an expert for the defence in trials for homicide. He hoped he would not be called upon to decide the question for himself in practice. He thought, however, that the highest view of the position of the medical examiner would deter him from accepting the position of a medical expert for the defendant.

Dr. Adams, of Framingham, said that, in his belief,

See page 364 of the Journal.
 See page 363 of the Journal.



it lowered the medical examiner in the eyes of the community to appear against another medical examiner

in any criminal case.

DR. DRAPER, of Boston, said that the matter seemed to him of sufficient importance to justify the Society in making an explicit statement of its judgment concerning it. He remarked that it was obvious that the appearance of a medical examiner acting as a medical expert for the defence was designed by the counsel for the defence to weaken or to annul the strength of the government's position in the case, and he felt sure that any medical examiner who lent himself to that end, to injure the effect of the evidence of a brother medical examiner who was acting in good faith for the State, was approaching the line of unbecoming conduct, if he did not really transcend it. He thought that the circumstances related in Dr. Hodgdon's paper afforded an opportunity to the Society to place its disapproval upon that kind of conduct; and he offered the following, and moved its passage:

Resolved, That in the opinion of the Massachusetts Medico-Legal Society it is improper and objectionable conduct in medical examiners to accept service as medical experts for the defence in trials for homicide in this Commonwealth.

Dr. Pinkham, of Lynn, heartily favored the resolution. Medical examiners are not advocates; in theory, their evidence is impartial; they occupy an independent position; they are ready to state facts favorable for the defence as well as those favorable for the prosecution. Any medical examiner who has not this feeling of the character of his position and who goes into another district as an expert witness for the defence has lowered himself and has taken an improper position, not only because he is opposed to a fellow medical examiner but because he has consented to be in a certain sense an advocate, as all hired expert witnesses are. This position is one which no honorable member of the Society should occupy.

Dr. Preserve, of Taunton, in view of the importance of the subject, and in order that it might be discussed more fully and deliberately, moved to lay the resolution on the table, for farther consideration at the

next meeting.

After brief discussion, the motion to lay on the table was unanimously adopted.

ANNUAL MEETING OF THE AMERICAN PUB-LIC HEALTH ASSOCIATION.

MONTREAL, P. Q., SEPT. 25, 26, 27, 28, 1894.

A WEEK of almost cloudless sky, an unusually large attendance, and a cordial reception by the local authorities have given to the meeting of this week an unusual interest.

The meeting was called to order on Tuesday morning by the President, Dr. E. P. La Chapelle, of Montreal. A telegram of regret together with a resolution of the same character was sent to several of the Mexican members of the Association who were absent either on account of their own illness or that of members of their families.

The number of papers presented during the sessions of the Association, was unusually large, and embraced almost every topic included in the scope of Public Sanitation.

First upon the list came a paper entitled

HYGIENIC NOTES MADE ON A SHORT JOURNEY THROUGH ITALY IN 1894,

by Dr. GEO. F. NUTTALL, Ph.D., Associate of Hygiene in Johns Hopkins University.

Dr. Nuttall's observations had reference to the sanitary condition of Naples, Rome and Florence; their water-supplies and sewerage systems, both ancient and modern; the housing of the people; and the care of streets. Special mention was made of the progress of cremation in Italy, and the methods employed for incineration of the dead in the Italian cities.

Dr. Lee, Secretary of the Board of Health of Pennsylvania, presented a paper entitled

THE CART BEFORE THE HORSE,

in which he denounced the practice of introducing public water-supplies in cities and towns, before the advent of general systems of sewerage and sewage-disposal.

DR. WYATT JOHNSTON, Bacteriologist of the Provincial Board of Health of Quebec, described the

WATER-SUPPLY OF MONTREAL,

which is obtained from the St. Lawrence River, about a mile above the Lachine Rapids. The water is conducted by an open conduit to a settling basin of about 23,000,000 gallons capacity, where it is purified by sedimentation. Dr. Johnston's observations showed that a considerable percentage of the bacterial impurity was removed by means of sedimentation. The length of time in settling was necessarily short, since the daily consumption of water (18,000,000) nearly equalled the capacity of the reservoir. A smaller reservoir of 1,500,000 gallons near the top of Mount Royal furnishes the high service, and affords better fire protection.

DR. A. N. Bell, of Brooklyn, N. Y., presented a graphic description of

THE GROUND WATER-SUPPLY OF BROOKLYN.

PROF. F. T. SHUTT, Chemist of the Federal Experimental Farm at Ottawa, spoke of "Air and Water on Farm Homesteads."

He had examined samples of water from wells on Canadian farms, and very frequently found it to be polluted. The purest water is certainly to be found in the country; but owing to the negligence of the people, it is a fact that villages and rural districts are much worse off in this respect than the cities.

MR. GEO. W. FULLER, Biologist in charge of the Experiment Station of the State Board of Health at Lawrence, Mass., presented a strong plea in favor of the sand filtration of water. In Lawrence, where the system has been introduced, the death-rate from typhoid has been reduced 60 per cent., and the experiment has proved amply that it is possible to protect communities having a polluted water-supply.

AFTERNOON SESSION.

DR. CHARLES SMART, Surgeon, U. S. N., presented the

REPORT OF THE SPECIAL COMMITTEE ON POLLU-TION OF WATER-SUPPLIES.

The report reviews at length the influence which a polluted water-supply may have had in the recent cholera epidemics in Europe and upon the spread of

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typhoid fever on both continents. The efforts to purify water by sand filtering are also reviewed, wherever made, and the report concludes:

"From this brief review of facts and opinions concerning filtration it will be seen that your committee hesitates to reaffirm its former positive language with regard to the sufficiency of filtration as protection against typhoid fever. Nor, on the other hand, do we regard the testimony as authorizing a formal declaration of opinion in favor of the efficiency of filtration. Our experience in this country is as we have seen, extremely limited, but it is hoped that the success achieved at Lawrence will lead to the filtration of other surface waters, each of which will probably teach an important lesson in connection with bacteriological experiments and with the mortality from typhoid fever, before and after the construction of filter-beds. In view of an unbroken record of typhoid fever in communities that use raw river water, and an equally unbroken record of lessened typhoid-rates following the filtration of such river-supplies, your committee considers that in Washington, D. C., special attention should have been given to the improvement of the general supply. This country needs some practical lessons in methods of water purification.

"In conclusion, your committee desires to invite attention to a proposition emanating from the McGill University of this city, for which credit is to be given to Professors J. George Adami and Wyatt Johnston, the latter a member of this committee. Impressed with the difficulty of reconciling observations made upon water bacteria with the descriptions of the various species that have been published up to the present time, and recognizing how much good and useful work is lying unpublished and incomplete from fear lest publication should after all result in renaming species that have already been described and in adding to the confusion already existing, these gentlemen desired to do something to aid in remedying the present unsatisfactory conditions. As the task of establishing order out of the present chaotic state of the literature of the water bacteria is too great for one man to undertake, the idea of a co-operative investigation is offered as the only means of speedy advancement in this line of work. Your committee considers that great advancement may be made by the practical development of this suggestion, and to further the accomplishment of this, it recommends that when its membership for the coming year is announced, it may be authorized to increase the number of its members by adding to the list the names of such investigators as may be willing to co-operate in this scheme of bacteriological study."

It was then moved by Dr. GARDNER, of London,

Resolved, That, in view of the danger to the public health by the sewage contamination of our fresh-water lakes, rivers and streams, this Association memorialize the different Federal Governments, as well as the State and Provincial Governments to pass laws prohibiting the contamination of these water supplies by sewage from cities, towns and villages, and compel them to provide some means for the treatment and oxidization of this sewage before emptying it into these places.

This resolution, with a motion to adopt the report, was referred to the Executive Committee without dis-

subject of

THE MANAGEMENT OF EPIDEMICS OF DIPHTHERIA IN RURAL DISTRICTS,

and dwelt with special emphasis on the necessity of cleansing the house and clothing by the liberal use of soap and warm water, after the manner employed in Glasgow.

DR. P. H. BRYCE, Secretary of the Provincial Board of Health of Ontario, read a paper on

THE PRACTICAL DIFFICULTIES EXPERIENCED BY OFFICERS OF HEALTH IN DEALING WITH CASES OF DIPHTHERIA.

A prominent point in the paper was the difficulty of diagnosis between simple sore throat and diphtheria. He emphasized the importance of bacterial examinations for all doubtful cases, and advised the isolation of doubtful cases.

Dr. J. E. LABERGE, Bacteriologist of the Board of Health of Montreal, read a paper in French upon

VACCINATION AS A PREVENTIVE OF CONTAGIOUS DISEASES.

which was mainly an exposition of the methods and principles enumerated by Pasteur.

DR. J. D. GRIFFITH, of Kansas City, read a paper

INNOCUOUS TRANSPORTATION OF THE DEAD.

He advised that a special compartment be prepared and set aside on baggage-cars for the transportation of bodies. This compartment should be lined with zinc and asbestos and covered with ice.

Dr. HINGSTON, of Montreal, said that the bodies of people who have died from infectious diseases were not allowed to leave the city, and on general principles the transportation of dead bodies should be stopped.

This sentiment met the general approval of the meeting, and finally it was decided to refer the whole matter to a special committee.

EVENING SESSION.

The exercises of Tuesday evening were held in Windsor Hall, and consisted in the formal opening of the Association, together with the Address of the Brief Addresses of Welcome were President. made by Dr. ROBERT CRAIK, Chairman of the Local Committee; by His Honor LIEUTENANT-GOVERNOR CHAPLEAU, of the Province of Quebec; by MAYOR VILLENEUVE; by Hon. L. P. PELLETIER, Provincial Secretary; and by Dr. G. MENDIZABAL, of Orizaba, Mexico — the latter in Spanish.

THE PRESIDENT'S ADDRESS.

The President, Dr. E. P. LA CHAPELLE, of Montreal, then delivered the annual address, in the course of which he said: "The American Public Health Association, since its foundation, now twentytwo years ago, ever true to its mission, has never ceased to labor for the advancement of sanitary science, for the promotion of measures and organizations that should effect the practical accomplishment of the laws and principles of public hygiene. It has thus realized the brightest hopes and most enthusiastic provisions of its worthy founders, and has extended BE. C. A. HODGETTS, of Toronto, presented the America. To-day it embraces the three great countries. tries that form this vast continent: the United States

of America, the Republic of Mexico, and the Dominion of Canada - all three working together in brotherly emulation, recognizing no political boundaries, and valiantly striving to attain one unique and humane object: the dissemination to all of the knowledge of public hygiene and the development of respect for its Every year the Association changes its decrees. place of meeting, and this for good reasons. spirit of its founders being to establish above all, a body for the diffusion and popularization of public sauitary science, this object could not be better attained than by extending to its greatest limits the influence of the Association; and for this purpose, no surer means could be found than bringing together its distinguished members in different, distant cities."

The speaker introduced the important subject of a Minister or Cabinet-Officer of Public Health, as follows: "May we not hope that governments, fully realizing the importance of those questions and wishing to afford greater facilities for protection, will soon see the necessity of creating a new department in their cabinets - that of Public Health; and that, in the near future, all governments will be advised and supported by a competent specialist, a minister of public health? We can easily foresee all the good that will arise from the creation of such a position.'

The address was comprehensive, scholarly, and wellsuited to the occasion. Special emphasis was laid upon the importance of maintaining pure supplies of food and water, and of devoting more attention to the study and prevention of alcoholism, which he considered as one of the greatest foes to public health in the higher Northern climates.

SECOND DAY .- WEDNESDAY.

The first paper of the second day's session was read by Dr. E. GAUVREAU, Director of the Vaccine Institute at St. Foye, Quebec, upon

THE CULTURE AND COLLECTION OF VACCINE LYMPH.

The paper showed that unusually good care is taken at this establishment to secure a pure and efficient supply of vaccine lymph for the use of physicians and boards of health.

Dr. N. E. Wordin, of Bridgeport, Conn., presented the subject of

THE RESTRICTION AND PREVENTION OF TUBER-CULOSIS.

He advocated stringent means, including the placing of tuberculosis among dangerous infectious diseases, and compulsory disinfection of apartments occupied by consumptives. "Nursing of children by tuberculous females should be forbidden, also expectora-tion upon floors and in public places. Sputa of consumptives should be burned, and in general hospitals consumptives should be isolated."

DR. F. O. DONOHUE, President of the New York State Board of Health, spoke of the examination of the milk-supply for tuberculosis. Since 1892 there has been a law in New York State providing for the slaughter of cattle found to be suffering from tuberculosis. Examination of animals immediately began, and out of 22,000 cattle 700 were ordered to be killed. The proof that there were so many diseased cattle was sufficient to require the formation of a special commission to inspect the milk-supply, which of responsibility upon the part of the propagator of has not yet made any official report.

Dr. PAUL PAQUIN, of Missouri, in a brief paper, recommended that

CONSUMPTIVES SHOULD NOT MARRY.

and advised every possible means, short of actual legislation, to discourage such marriages.

Dr. SEWALL, of Denver, Col., read a paper on the SEGREGATION OF CONSUMPTIVES IN ARID REGIONS, in which he advised the establishment of a number of cottage sanatoria in places situated at altitudes of 5,000 to 8,000 feet above the sea-level, where consumptives might be successfully treated. He advocated the use of out-door employments and recreation as a necessary part of such treatment.

AFTERNOON SESSION.

The usual afternoon session was omitted; and the Association went by rail to Lachine, where they were taken on board a steamer and conveyed down the Lachine Rapids, arriving at Montreal before sunset.

EVENING SESSION.

At the evening session, Dr. F. MONTIZAMBERT, Superintendent of Canadian Quarantines, gave a graphic description of

THE QUARANTINE STATION, AND THE METHODS EM-PLOYED AT GROSSE ISLE, BELOW QUEBEC.

The buildings, appliances, etc., were illustrated by lantern slides, and formed a fitting introductory to the excursion of the Association, which was made the following Friday.

PROF. J. C. CAMERON, M.D., of McGill College, presented in an illustrated lecture,

SOME POINTS IN THE HYGIENE OF THE YOUNG IN SCHOOLS.

Special prominence was given to the construction of school desks and seats, and to the hygiene of respi-

DR. T. D. CROTHERS, Superintendent of Walnut Lodge Hospital of Hartford, Conn., read a paper upon THE INFLUENCE OF INEBRIETY UPON PUBLIC HEALTH, in which he showed, in general, that alcoholism had quite as serious an influence upon the health of a community as some of the minor evils which receive much more attention from sanitary experts. He advised that pauper drunkards be subjected to discipline, and employed in public work until cured.

THIRD DAY .- THURSDAY.

Resolutions relative to Alcoholism, and River Pollution were offered, and referred to the Executive Committee.

VACCINE AND VACCINATION.

DR. R. WALSH, of Washington, D. C., read a paper upon this subject, the conclusions of which were as follows:

"The selection of lymph and the operation of vaccination has not received from the profession at large the thought deserved. During scares, vaccinations are hastily performed, and often there is no after inspec-tion. The lymph used may be feeble or the operation badly done.

"What are the remedies? An honest observation vaccine and the physician who should use it.

"The physician should see that each infant brought under his care is successfully vaccinated during the first year of its life, and at least again at sixteen. ideal protection can be secured by vaccinating to the point of saturation - I mean to vaccinate at six months of age, or earlier, and then each succeeding six months until no result is obtained, making test revaccinations at intervals of a few years thereafter. The lymph should be used direct from the propagator, holding him responsible, not after it has passed through the hands of second and third parties and all responsibility lost.

"The accumulation of unvaccinated material, and consequently the increased danger of outbreaks of smallpox, is caused by the general practitioner neglecting to perform his duty at the proper time."

THE PREVENTION OF THE SPREAD OF YELLOW

Dr. F. FORMENTO, of New Orleans, Chairman of the International Committee on the Prevention of the Spread of Yellow Fever; read a portion of the report of that committee, dealing chiefly with the history of the prevalence of yellow fever in the United States, and showing that efficient systems of quarantine in recent years had practically excluded the disease from New Orleans and other southern ports.

THE DISPOSAL OF GARBAGE AND REFUSE.

The committee on this subject reported, through its chairman, RODOLPH HERING, C. E., who had recently returned from Europe, where he found that incineration was almost the only method in use. There are great differences in the character and composition of garbages in the two countries, and methods efficient in one place may not be practicable in another. Disinfection of garbage is impracticable, and all things considered, cremation appeared to be the best method.

DR. DURGIN, Health Commissioner of Boston, presented a new and ingenious device for use in families, for reducing the daily kitchen waste, by means of heat in connection with the cooking-stove or range. The process consisted of expelling the moisture by heat and burning the residuum in the kitchen fire. Education of the people to use such a method would result in a great saving in the expense of garbage collection and disposal in cities.

Col. W. F. Morse, of New York, described the collection and disposal of the refuse and garbage of large cities, with special reference to that of New York City.

CAR SANITATION.

Dr. G. P. Conn, of Concord, N. H., Chairman of Committee on Car Sanitation, presented the report upon that subject. The principal points considered were the construction, heating, lighting, ventilation, and methods of cleaning railway cars, special emphasis being laid upon the importance of thorough cleansing. The difficulty of devising any system of ventilation which is applicable, both to cars in motion and standing still was recognized. Systematic instruction of train employes in the sanitary management of railway cars was advised, and it was suggested that this duty should be added to those of the railway surgeons.

AFTERNOON SESSION.

the afternoon session. First upon the list were eight ing uniform testimony to the hospitality of their papers upon "School Hygiene." These were fol- Canadian hosts.

lowed by as many more upon miscellaneous sanitary questions.

DR. L. LABERGE, Medical Officer of Health of Montreal, described the progress of municipal health administration in the city from its earliest history to the present, and showed that its death-rate had diminished from about 37 per 1,000 annually in 1872, to 24 per 1,000 in 1892.

MR. J. E. DORE, C. E., of Montreal, presented the subject of the mechanical ventilation of school-houses. In conclusion, he stated that the mode of ventilation in buildings devoted to educational purposes, is a mechanical system which shall cause a current of from 400 to 500 cubic feet per pupil to circulate from bottom to the top, the fresh air having been heated before its introduction to about five degrees below the temperature to be maintained in the room. The heating apparatus placed in the rooms to compensate the loss of heat through the walls should also be planned on this basis.

EVENING.

In the evening, the members of the Association attended a reception, and conversazione at the Mc-Donald Engineering Buildings of McGill University. The company were entertained with music and a series of interesting experiments illustrating the strength of materials used in bridge and house construction.

FOURTH DAY .- FRIDAY.

A committee of three was appointed to investigate the influence of intoxicating liquors upon public health, to report at the next Convention.

The following were elected as officers for the ensuing year:—President, Dr. William Bailey, Louisville, Ky. First Vice-President, Dr. G. P. Conn, Concord, N. H. Second Vice President, Dr. G. Mendizabal, Orizaba, Mexico. Secretary, Dr. I. A. Treasurer, Dr. H. D. Watson, Concord, N. H. Holton, Brattleboro, Vt. Executive Committee, Dr. H. D. Bahnson, No. Carolina; Dr. P. H. Bryce, Ontario; Dr. F. DeVaux, No. Dakota; Dr. Jas. T. Reeve, Wisconsin; Dr. E. Liceaga, Mexico; Dr. P. Thompson, Kentucky.

The SECRETARY presented the question of publishing the transactions of the Association quarterly instead of annually, and the subject was referred to the Executive Committee.

Several papers which were announced for Friday evening were read by title only.

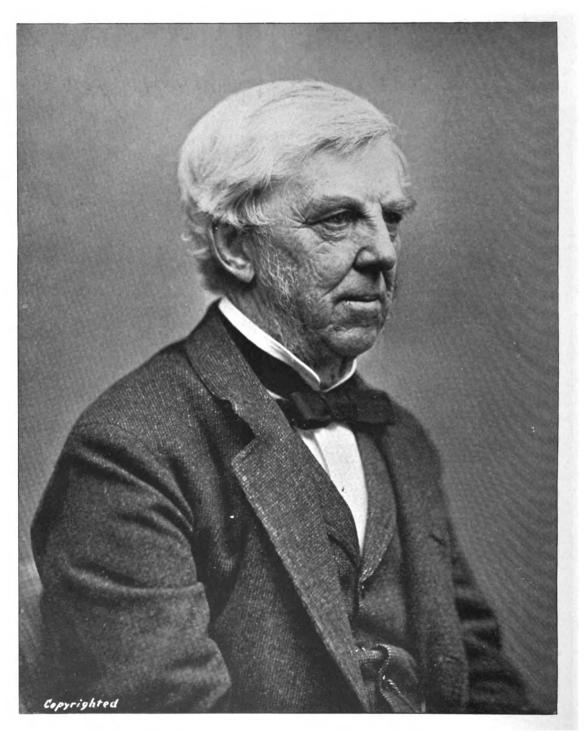
Dr. M. T. Brennan of Laval University, presented a "Plea for Aseptic Vaccination."

The Committee on Nomenclature and Vital Statistics, reported in favor of submitting the question of a revision of the nomenclature in use in America to the principal medical societies, medical colleges and Boards of Health for consideration: they also recommended the use of the geometric rate of increase for estimating the populations of cities, and the adoption of a standard of age-distribution.

In the afternoon, nearly all members present went on board the steamer Canada, and proceeded down the river to Quebec and the quarantine station at Grosse Isle, where they arrived on Saturday morning. After a hurried visit at the quaint old city of Quebec, An unusual number of papers were disposed of at they returned to Montreal on Sunday morning, bear-

BOSTON MEDICAL AND SURGICAL JOURNAL.

Vol. CXXXI, No. 15.



Oliver Wendell Holmes

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BORN, AUG. 29, 1809 — DIED, OCT. 7, 1894.

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THE BOSTON

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THURSDAY, OCTOBER 11, 1894.

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OLIVER WENDELL HOLMES.

SINCE its last issue the JOURNAL has lost its oldest and one of its best friends. Oliver Wendell Holmes died at noon on Sunday, October 7th. In common with all his fellow Bostonians, with so many of his fellow countrymen, with so many others still farther away but having the tie of a common language and a kindred human nature, we stop to record our sense of loss - not to mourn, for his was a wellrounded and well-filled life; his years were ripe, his personal sorrows were few, and the pleasures he had given others were many. He was born in Cambridge, August 29, 1809, and was at the time of his death in his eighty-sixth year. Up of Hon. Charles Jackson who was for eleven years to last spring, when he suffered from an illness attributed to influenza, his health, saving occasional Jackson was also the niece of Dr. James Jackson, attacks of asthma by which he had through many years been troubled, had been good, and he retained his time, and for many years a Professor in the an unusual physical vigor and sprightly interest in men and things, for his years. He grew old so quietly, so sensibly, so judiciously, so gracefully, that it was difficult for those in occasional contact with him to realize that he was a very old man.

The day of his birth was Commencement Day at Cambridge. He was the third of five children. His father was Rev. Abiel Holmes, a clergyman of a somewhat liberal creed for a Calvinist, settled for many years, from 1792 to 1831, as pastor of the First Parish Church at Cambridge. His paternal grandfather, David Holmes, was a physician who served as a surgeon in the French War and again in the Revolution. On his mother's side he was of Dutch His mother's name was Wendell. grandfather, Jacob Wendell, came to Boston from medical ancestor also on the maternal side.

lips, whose son was Wendell Phillips, and the common Dutch ancestry is alluded to in the lines:

"Fair Cousin Wendell P .. Our ancestors were dwellers beside the Zuyder Zee; Both Grotius and Erasmus were countrymen of we, And Vondel was our namesake, though he spelt it with a V."

He went to school in Cambrideport for five years, then to Phillips Academy, Andover, in 1824 for one vear, and entered Harvard College in 1825. He graduated in 1829. In 1830 he entered the Harvard Law School and studied law for one year under Judge Story and Professor Ashmun. At this time he got his first "attack of author's lead-poisoning," the symptoms of which were exhibited by contributions to the Collegian, a clever college magazine.

In the autumn of 1830 he began the study of medicine in Boston at the Harvard Medical School, under Drs. Channing, Ware, Jackson and others. In April, 1838, he went to Europe, and continued his medical studies there until October, 1835. He spent most of the time in Paris at the École de Médecine, and under Louis at La Pitié. He also travelled. In 1835 he returned home, and took his degree of M.D. in 1836 from the Harvard Medical School. In August of the same year he read his poem, "Poetry, Metrical Essay," before the Phi Beta Kappa Society. In 1836-7 he won three of the four Boylston Prizes offered for medical dissertations, by paers on "Indigenous Intermittent Fever in New England," "Neuralgia," "Direct Exploration." The first of these essays is still a medical classic.

In 1838 he was appointed Professor of Anatomy and Physiology in Dartmouth College at Hanover, N. H. He held this position for two years. June 16, 1840, he married Amelia Lee Jackson, daughter a judge of the Massachusetts Supreme Court. Miss one of the most eminent medical practitioners of Harvard Medical School. Three children were born from this marriage, two sons and a daughter. Of these, the elder son, Oliver Wendell Holmes, now a justice of the Massachusetts Supreme Court, alone survives. There is also a grandson, Edward Jackson Holmes, the son of Dr. Holmes's younger son. After his marriage, Dr. Holmes lived for twenty years at No. 8 Montgomery Place, now Bosworth Street. From there he moved to Charles Street, and subsequently to the house on Beacon Street in which he died.

In 1847 Dr. Holmes was appointed Parkman Professor of Anatomy and Physiology in the Harvard Medical School. In 1871 the title was changed to Her Parkman Professor of Anatomy, and physiology was made a separate department. He held this pro-Albany, early in the eighteenth century, and married | fessorship, teaching and lecturing on anatomy, for the daughter of Dr. James Oliver: so that we find a | a period of thirty-five years. In addition he gave A some lectures and instruction in physiology and midaughter of Jacob Wendell married William Phil-croscopy. Hence his often-quoted remark that he occupied "not a chair but a whole settee" in the Medical School. Dr. Holmes was not a great anatomist, he would hardly have claimed to be such himself; but he was a very careful, conscientious, punctual and painstaking teacher - qualities which are not always found accompanying the other characteristics of such a temperament as his. In addition, he was a delightful lecturer; always concise and clear, and sometimes witty even in discussing a subject ordinarily considered dry. It is fair to say that Dr. Holmes was probably the best lecturer on anatomy of his time in this country. By his manner, his method and his style, he compelled the attention of students who might otherwise, though present in the body, have been absent in spirit.

He was Dean of the Harvard Medical School from 1847 to 1858; University Lecturer in 1863-64; Overseer of Harvard College from 1876 to 1882. In 1882 he was appointed Professor of Anatomy, Emeritus.

Dr. Holmes joined the Massachusetts Medical Society in 1836; in 1852 he was Anniversary Chairman at the annual meeting of the Society, held at Pittsfield, where he then had his summer home; in 1860 he was the orator at the annual meeting, and then delivered his well-known essay, "Currents and Counter-Currents in Medical Science"; at the Centennial Anniversary Dinner of the Society in June, 1881, he delivered a poem, some passages of which still dwell in the memories of those present.

In 1879 the publishers of the Atlantic Monthly gave Dr. Holmes a dinner in honor of his seventieth birthday; in April, 1883, a complimentary dinner was given to him at Delmonico's by the medical profession of New York City. In 1889 Dr. Holmes gave his medical books to the Boston Medical Library Association, which held a reception in his honor.

For many years he was President of this Association, and always took much interest in its welfare. an interest shown in many serviceable ways.

His love of books, as books, was great. From his father he inherited the tastes of the antiquary. He knew the literature of medicine and of his department as it is seldom known to-day.

Dr. Holmes received from Harvard College the degrees of A.B. in 1829, of A.M. (Hon.) in 1889, of M.D. in 1836, of LL.D. in 1880; in June 1886, he received the degree of LL.D. from Edinburgh, of Litt.D. from Cambridge, of D.C.L. from Oxford.

In 1857, in response to an appeal from his friend James Russell Lowell who had assumed the editorship of the Atlantic Monthly, Dr. Holmes began to contribute to that periodical the chapters of "The Autocrat of the Breakfast Table." This was followed by "The Professor at the Breakfast Table," "The Poet at the Breakfast Table," and "Elsie Venner" ("a medicated novel"). It is not our province to discuss here his purely literary work. We must, however, note that just as the "Autocrat" contributed more than any previous composition to establish his position as a man

were turned more and more to literature; he became gradually more a man of letters and less a man of science. But all through his career, whether as a man of science or as a man of letters, the action and reaction of one set of gifts and one kind of training upon other gifts and another training - to the great mutual advantage, adorument, and development of each — is clearly visible; and nowhere is this more evident than in those very pages of the "Autocrat" and the "Professor." Then, if we turn to addresses and poems delivered before medical bodies or on medical subjects, the converse of the statement is again instantly recognized. The style was always worthy of the statemeut, and the statement rarely failed to merit the style. His essays on "Puerperal Fever" and on "Intermittent Fever in New England" may and should still be read by all who are interested in those subjects, as models of literary statement and of scientific reasoning.

The portrait of Dr. Holmes which we publish this week is at once an excellent likeness and a very pleasing picture of him in his later years - for us by far the most so of any which we know. The photograph was taken by the Boston sculptor, Bartlett, with a view to making a bust. The design was given up, as the necessary sittings were irksome to the subject, and we are indebted to Mr. Bartlett and Dr. J. R. Chadwick for the right to the picture. It was not easy for the painter's brush or the sculptor's chisel to do justice to Dr. Holmes's mobile features. Our portrait and that by Spy (although a caricature) published in Vanity Fair, London, June 19, 1886, are those by which we shall like to remember the "Professor" and the "Autocrat." The portrait by Alexander at the Harvard Medical School, that by Billings belonging to the Boston Medical Library Association, and that by Mrs. Whitman presented by Dr. Weir Mitchell to the College of Physicians of Philadelphia, have naturally a more academic character.

We also print to-day an unpublished poem by Dr. Holmes. Some passages have been omitted as being more suited to the familiar professional audience to which it was originally addressed. Other passages will be accepted as worthy of his best and most characteristic moments of earnest playfulness.

We also publish a bibliographical résumé of all his writings, both in prose and verse, upon medical and kindred subjects. There may be a few sins of omission, but it is thought to be nearly complete and accurate.

Dr. Holmes was, whilst his vigor lasted, always ready to respond with his pen to appeals for obituary notices of deceased friends and professional brothers of less fame than himself. These notices were always kindly, generous and graceful, as well as just and discriminating. He has left behind him no enemies and hosts of warm admirers who during his life guarded not that "ungenerous silence which leaves all the fair words of honestly-earned praise to the writer of obituary notices and the marble worker." He himself needs no obituary. But we shall long continue to revive our of letters, so from this period his time and thoughts recollections of those former days when he was with us.

AN UNPUBLISHED POEM.1

BY OLIVER WENDELL HOLMES, M.D.

This evening hour, which grateful memory spares From evening toil and unrequited cares; These curling lips, these joy-revealing eyes, These mirthful tones, re-echoing as they rise; These friendly pledges on this festive shrine, The glistening goblet and the flowing wine; This genial influence which the coldest heart Warms to receive and opens to impart: — Mock the poor Art, who does her subjects wrong, And steals from Pleasure all she wastes in song. Yet since you ask this feeble hand to strew Wreaths on the flowers and diamonds on the snow: Take all it bears, and, if the gift offend, Condemn the Poet, — spare! oh, spare! the friend!

Yes, while I speak some magic wand appears, Shapes the long past (Oh, say not happier) years. Ye lawless fancies, yet untaught to know The charms of reason, or the scourge of woe; Ye boyish dreams, now melting into air; Ye virgin forms, alas, no longer fair; Ye scattered friends, with many a tear resigned, Once all our own, now mingled with mankind, Since, save in memory, ye appear no more In the bright Present, let the Past live o'er. Still in the heart some lingering spark remains — You cannot chase it from the shrinking veins. Grief comes too early, Pleasure ne'er too late. Snatch the fair blossom whatsoe'er its date. If youth still charm thee, mirth is justly thine; If age has chilled thee, —lo! the generous wine!

Oh, thoughtless revellers, when you set my task How little dreamed you of the toil you asked -How shall I please you? I, a grave young man Whose fate is drudgery on "the useful plan." How can I coax you, smooth you, comb you down, And cheat your frontals of that awful frown? Portentous scowl! which marks in every age The blistering, clystering, tooth-extracting sage. A verse too polished will not stick at all: The worst back-scratcher is a billiard ball. A rhyme too rugged would not hit the point, Its loose legs wriggling in and out of joint. Shall I be serious, touching, lachrymose, Mix tears with wine and give you all a dose? But well-filled stomachs have not room for grief, For sips and sighs — for porter and roast-beef. Shall I be learned, and with punch and claw Dig stumps of Greek from every Ancient's jaw? But who quotes Cuvier when he feasts on snipe, Or reads Gastritis when his wife cooks tripe? Not all the wisdom of recorded time Can change one tidbit to concocted chyme. Not all the schools from Berkshire to the Nile Can melt one sausage into milky chyle. Nor all the Galens since Deucalion's flood Change lifeless pudding into living blood.

Our noble Art, which countless shoals invade, Some as a science, many as a trade! In every column quackery has its line; From every corner stares the doctor's sign; From every shore the straining vessel tugs Ill-scented balsams, stomach-turning drugs; The keels of commerce clear the farthest surge Lest some old beldam want her morning purge. The seaman wanders on his venturous route To turn a baby's stomach inside out. Rich were the Queen of yon hepatic isle With half her subjects squander on their bile;

Rich were Van Buren could he pay his bills With half his people waste on "Brandreth's Pills,"— Or with their products fill his farmers' carts With tare and tred for reproductive parts.

Heaven surely ordered, on Creation's morn,
This mighty law — that children must be born.
Hence came the science thou dost show so well
With white forefinger, Madame Lachapelle!
Hence came the forceps, hence the screw to pinch
The soul's own viscus down to half an inch.
Hence came the weapons which the embryos bore
Left in the lurch, their brains escaped before.
(A trivial change — since so oft we find
That babes grown up have left their brains behind).
Hence came the fillet, whence the infant wretch
Mistakes the midwife for her friend Jack Ketch.
Hence came the lever, which the toothless fry
Take for a crowbar, when the monsters pry.
Hence the scooped pinchers with the fangs between
Skull-crushing Davis — thy divine machine.
Hence all the "claptraps" potent to extract
The hero, struggling in his closing act.

So the stout fetus, kicking and alive,
Leaps from the fundus for his final dive:
Tired of the prison where his legs were curled,
He pants like Rasselas, for a wider world.
No more to him their wonted joys afford
The fringed placenta and the knotted cord;
No longer liberal of his filial thanks,
He drums his minutes on his mother's flanks.
But nobly daring seeks the air to find
Thro' paths untrodden, spite of waves or wind.
Hush: decent Muse, and leave such things as these
To modest Maygrier and concise Dewees.

Thus with the entrance of the first-born man The reign of science o'er the earth began; Nurse of his weakness, soother of his woes, She waits and watches till his sorrows close. Nor yet she leaves him when the undying mind Flits from his clay and leaves the frame behind.

If thou shouldst wonder that mankind must die Ask the Curator of our Museum, Why? Were man immortal, who had ever seen The stomach, colon, kidneys, pancreas, spleen? Each pickled viscus, every varnished bone, Seducing schirrus and attractive stone, Lost to the world, had never come to grace Our well-filled phials in their padlocked case. Unknown to fame had Morgagni sighed, And Louis floated down oblivion's tide, On Brunner's glands no cheering ray had shone, And Peyer claimed no patches save his own. Science, untaught her scalpel to employ, Had seen no ileum since the days of Troy; And man the ruler of the storms and tides, Had groped in ignorance of his own insides. Thus the same art that caught our earliest breath Lives with our life and lasts beyond our death. Man, ever curious, still would seek to save Some wreck of knowledge from the waiting grave. Yet, keen-eyed searcher into Nature's laws Slight not the suffering while thou recks't the cause. How poor the solace, when thy patients die To tell the mourners ALL the reasons why. Love linked with knowledge crowns thy angel art, Gold buys thy science; — Heaven rewards thy heart.

Between two breaths, what words of anguish lie; The first short gasp, the last and long-drawn sigh. Thou who hast aided, with coercive thumbs, The red-legged infant, kicking as it comes; Thou who hast tracked each doubtful lesion home With probe and scissors, knife and enterotome;

 $^{^{\}rm 1}$ These verses, from which some passages have been omitted, were read at a medical supper party about forty-eight years ago.

Short is the opening; short the closing scene; But a long drama fills the stage between. Nor deem it strange — since every reason flings Its sun or cloud on life's unguarded springs; Since song or science, love of fame or truth, All feed like vampires on the brow of youth; Since the red goblet shakes the hand that grasps, And hot-cheeked beauty wastes the form she clasps One-half mankind should spend their time to make The pills and draughts the other half must take. Oh! fertile source of never-failing wealth, Mysterious Faith! thou alchemist of health! But for thy wand, how vainly should we strive To cure the world and keep ourselves alive! Not all the fruit the yellow harvest yields, When the curved sickle sweeps the rustling fields; Not all the stores the deep-sunk vessel brings, When India's breezes swell her perfumed wings; Not all the gems whose wild Auroras shine Thro' the black darkness of Golconda's mine, Can match the profits thou dost still dispense To thy best favorites, — Ease and Impudence; Who find Golconda in a case of gout, Or rich Potosi in a baby's clout.

Small is the learning, which the patients ask, When the grave Doctor ventures on his task. To greet the Quack admiring hundreds come, Whose wisdom centres in his fife and drum. Why shouldst thou study, if theu canst obtain A wig, a gig, an eye glass or a cane? Greenest of greenhorns; know that drugs like these Are the best weapons to subdue disease Shouldst thou not flourish by enacting lies, Step into print, good friend, and advertise; And in the "Post," the "Herald," or the "Sun" Thus let thine honest manifestoes run: That great physician, learned Dr. C., F.R.S., Staff-Surgeon and M.D., Lately from London; now at number four Left side of North St. (Don't mistake the door) May be consulted for life's various ills: Where's also sold the patent "Pickwick Pills." What grieves the Doctor is, that all mankind To their own good should be so shocking blind. He could not stand it, but relief imparts The grateful feeling of a thousand hearts. His fee is nothing; 'tis his conscious skill, Backed by the virtues of the "Pickwick Pill," That prompts the Doctor to dispense his cure To all mankind and also to the poor. What is dyspepsia? When the humors vile The cardiac sphincter closes on the bile. What cures dyspepsia? Why the doctor's skill (Consult by letter and enclose a bill).

Of testimonies which have come in heaps
But two small cartloads now the doctor keeps.
They were too numerous for the public eyes;
Hence the small number which he now supplies.
John Smith, of Boston, aged thirty-five,
Is much surprised to find himself alive,
Which justly owing, as he thinks must be,
Half to his Maker;—half to Dr. C.,
Had a stuffed feeling; used to wake in starts;
Had wind and rumbling in his inward parts.
Had swelled stomach; used to vomit some;
Was often squeamish; thought his brains were numb;
Had fell away; could not digest his food;
Had tried all physic, nothing did him good.
In short, was dying with numerous ills,
CURED BY THREE DOSES OF THE "PICKWICK PILLS."

The doctor's skill, the sluggard clergy owns, As in the note from Reverend Judas Jones. Dear Sir: The blessing of the Lord attend You and your ointment called "the loafer's friend." My worthy wife, the partner of my toils, Like Job of old, has suffered from the "boils"; Some on her fingers, wherewithal she knits, Some on her person, whereupon she sits, Which quite unfit her when her ail returns To do her duties by her small concerns. Since times are hard and earthly comforts dear, And gospel harvests come but once a year, With my good deacon I resolved to halve One precious box of your unrivalled salve. With Heaven's kind blessing and one hearty rub We chased away this leprous Beelzebub. Enough was left to cure our warts and styes, And six great pimples on my housemaid's thighs. Please send three boxes, by the earliest hand, To Judas Jones, your servant at command. P. S. Your pills have cured my baby's fits; I'll write particulars if the Lord permits.

The following letter sent to Dr. C., Comes from Barrabas Waterpot, M.D. Dear Sir: The duties which I owe mankind Have made it proper that I speak my mind: And while my breast an honest conscience fills, I can but praise the patent "Pickwick Pills." I have no interest in the pills at stake, And never sell them, and but rarely take. Fit for the welfare of a suffering race, Their many virtues I now feebly trace: When taken fasting they the strength maintain; When on full stomach they deplete the brain. One pill relieves the most drowning thirst; Two keep one sober, tho' he drink to burst; One pill a week cures phthisis and the gout, One-half a pill will keep the measles out Rubbed on the fingers they destroy the itch, Worn next the skin, —lumbago and the stitch; Tho' like a corkscrew they the bowels search, A curious fact, — they never work in church; Small children take them with advantage great, As also ladies in a certain state. In short, this medicine every want fulfils; I give no physic but the "Pickwick Pills." Please print this letter which of use may be, (Signed) Barrabas Waterpot, M.D.

Here's a small postscript Doctor C. left out (Of small importance to the public, no doubt). The pills sell briskly — twenty gross or more — Send a fresh parcel to the grocer's store; Put in more jalap; never mind expense, Folks must be griped or grudge the fifty cents. Put up three sizes; one three times as small, For little brats; the big ones kill them all. I want my pay, you poison-pounding knave, Send me good bills, — how like the d—l you shave.

All this well printed and with bigger type
Words like DYSPEPSIA, LIVER, HUMOR, GRIPE—
Two solid columns in the "Times" would fill,
And make thy fortune by the "Pickwick Pill."
But thou, poor dreamer, who hast rashly thought
To live by knowledge which thy bloom has bought,
Thou who hast waited with a martyr's smile,
Hope gently whispering—"Yet a while"—
Too proud to stoop thy noble aim,
Too poor to pay the price of fame;
Thou all unfriended, while a thousand fools
Vaunt their raw cousins reeking from the schools;
Go, scorn the art that every boon denies
Till age sits glassy in thy sunken eyes;
Go, scorn the treasury which withholds its store
Till hope grows cold, and blessings bless no more.

Peace to our banquet, let us not prolong Its dearest moments with my idle song. This measured tread of evermarching rhyme, Like clock-work, pleases only for a time,

Too long repeated, makes our heart so sick We cut the weights to stop its tedious click. Let sweeter strains our opening hearts inspire, The listening echoes tremble round the lyre. Dance! Bacchus! Hours of labor come again To lock the rivets of our loosened chain. Shine, star of evening, with thy steadiest ray To guide us homeward on our devious way.

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Brief Expositions of Rational Medicine. Vol. ii, 1858, p. 736.
Mothers and Infants, Nurses and Nursing. Vol. iii, 1859, p. 736.
The Steroscope and the Sterosgraph. Vol. iii, 1859, p. 738.
The Human Wheel, its Spokes and Felloes. Vol. xi, 1863, p. 567.
The Great Instrument. Vol. xii, 1863, p. 637.
Sex in Education (Dr. Clarke). Vol. xxxii, 1873, p. 737.
Prof. Jeffries Wyman. Vol. xxxv, 1874, p. 611.
Crime and Automatism. Vol. xxxv, 1875, p. 466.
A Memorial Tribute (to Dr. Samuel G. Howe). Vol. xxxvii, 1876, p. 474. 1876, p. 474.
Benjamin Pierce. Vol. xlvi, 1880, p. 824.

NORTH AMERICAN REVIEW.

The Mechanism of Vital Actions. July, 1857.

NEW ENGLAND QUARTERLY JOURNAL OF MEDICINE AND SUR-GERY, BOSTON.

Contagiousness of Puerperal Fever. Vol. i, 1843, p. 503.

PROCEEDINGS OF THE AMERICAN ACADEMY OF ARTS AND SCIENCES.

On the Use of Direct Light in Microscopical Researches and a

model by him of a newly-invented horizontal microscopical apparatus as figured. Vol. ii, pp. 326-332.

In Vol. iv, pp. 373-375, the term Reflex Vision is proposed as a phrase proper to certain original optical experiments, an account of which is given.

BESIDES the above articles the following poems were written for medical gatherings or deal with medical thoughts. They are now all included in the Riverside edition of his writings, revised and published in 1893:

The Morning Visit.

The Two Armies.

The Stethoscope Song: A Professional Ballad.

Extracts from a Medical Poem: The Stability of Science, A Portrait, A Sentiment.

A Sentiment. A Poem for the Meeting of the National Sanitary Association. Hymn read at the Dedication of the Oliver Wendell Holmes Hospital, Hudson, Wis., June 7, 1887.

THE BOSTON MEDICAL AND SURGICAL JOURNAL has published the following articles on Dr. Holmes from various sources: Editorial remarks on Medical Highways and Byways (from Medical Times and Gazette, London). Vol. cvii, 1882, p. 331.
Editorial remarks in Boston Medical and Surgical Journal. Dr. Oliver Wendell Holmes's Resignation of the Parkman Profes-

sorship of Anatomy in Harvard University. Vol. cvii, 1882,

ccount of his Farewell Lecture to the Students of the Harvard

Account of his Farewell Lecture to the Students of the Harvard Medical School, November 28, 1882. (Presentation of a Loving Cup by the students and his letter to the donors.) Vol. cvii, 1882, p. 546.

A Reception to Drs. Holmes and Bigelow. Vol. cviii, 1883, p. 22.

A Toast from Dr. Fordyce Barker to Drs. Holmes and Bigelow. Vol. cviii, 1883, p. 45.

Appointment of Dr. Oliver Wendell Holmes Emeritus Professor of Anatomy in Harvard University. Vol. cviii, 1883, p. 46.

Resolutions of the Faculty of the Harvard University Medical School on the Resignations of Professors Holmes and Bigelow. Vol. cviii, 1883, p. 72.

Sweet Holmes: a stanza from London Punch on his resignation from Harvard University. Vol. cviii, 1886, p. 86.

The New York Dinner to Dr. Holmes. Vol. cviii, 1883, p. 378 and 379.

Presentation of a Portrait of Professor Holmes to the Harvard Medical School. Vol. cix, 1883, p. 404.

New Facts about Dr. O. W. Holmes. Vol. cx, 1884, p. 334.

Dr. Holmes in England. (From British Medical Journal.) Vol. cxiv, 1886, p. 626.

Dr. Oliver Wendell Holmes (Phœbo ante alias dilectus). Vol.

cxv. 1886, p. 217.

Announcement of the Oliver Wendell Holmes Hospital, Hudson, St. Croix County, Wisconsin, 1888. (St. Paul, 1888, 15 pp. 8°.)

METEOROLOGICAL RECORD.

For the week ending September 29d, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: -

	Baro- meter				Relative umidity.		Direction of wind.		Velocity of wind.				1	
Date.	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 Р. М.	8.00 A. M.	8.00 P. M.	R.00 A. M.	8.00 P. M.	Date 6- 11 1- 1-
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*O., cloudy: C., clear; F., fair; G., fog; H., hasy; S., smoky; E., rain: T., threat ning; N., smow. † Indicates trace of rainfall. ** Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, SEPTEMBER 29, 1894.

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Deaths reported 2,442: under five years of age 1,040; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 557, consumption 251, acute lung diseases 168, diarrheal diseases 294, diphtheria and croup 128, typhoid fever 47, whooping-cough

32, scarlet fever 24, cerebro-spinal meningitis 13, erysipelas 9,

32, scarlet fever 24, cerebro-spinal meningitis 13, erysipelas 9, maiarial fever 9, measles and small-pox 3 each.
From whooping-cough Brooklyn 10, Philadelphia, 8, Boston and Cleveland 4 each, New York 3, Washington 2, Pittsburg 1.
From scarlet fever Cleveland 14, Boston 3, New York 2, Philadelphia, Cincinnati, Lowell, New Bedford and North Adams 1 each. From cerebro-spinal meningitis Washington 4, New York, Worcester and Malden 2 each, Philadelphia, Boston and Holyoke 1 each. From malarial fever Brooklyn 8, Philadelphia 1. From measles New York 2, Cleveland 1. From small-pox New York 2, Philadelphia 1.
In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442 for the week ending September 15th, the death-rate was 15.9. Deaths reported 3,180: acute diseases of the respiratory organs (London) 143, diarrhea 229, diphtheria 80, whooping-cough 46, fever 44, measles 32, scarlet fever 30, small-pox (London and Birmingham 3 each) 6.
The death-rates ranged from 12.1 in Nottingham to 24.5 in Sunderland; Birmingham 14.4, Bradford 16.5, Croydon 13.0, Hull 15.9, Leeds 14.9, Leicester 16.3, Liverpool 18.5, London 14.9, Manchester 19.1, Newcastle-on-Tyne 19.9, Norwich 14.3, Portsmouth 16.8, Salford 15.5, Swansea 18.0.
In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending September 22d, the death-rate was 15.7. Deaths reported 3,155; acute diseases of the respiratory organs (London) 172, diarrhea 163, diphtheria 76, whooping-cough 58, fever 44, measles 39, scarlet fever 32, small-pox (Birmingham 2, Wolverhampton 1) 3.
The death-rate ranged from 6.2 in Halifax to 23.5 in Liverpool; Birmingham 14.1, Bolton 14.5, Bradford 14.4, Gateshead 12.8, Leeds 18.1, Leicester 13.8, London 14.5, Manchester 19.2, Newcastle-on-Tyne 19.6, Nottingham 11.2, Portsmouth 18.0, Sheffield 16.8, Sunderland 15.6, Swansea 15.3.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 29, 1894, TO OCTOBER 5, 1894.

Leave of absence for two months and fifteen days, to take effect on being relieved from duty in the Department of Texas, is granted Captain William B. Davis, assistant surgeon.

Leave of absence for one month is granted Captain Adrian S. Polhemus, assistant surgeon, with permission to apply to the proper authority for an extension of fourteen days.

The extension of leave of absence on surgeon's certificate of disability granted LIEUT.-Col. JOSEPH R. GIBSON, deputy surgeon-general, is further extended six months on account of sickness.

SOCIETY NOTICE.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLE DISTRICT. — The Section for Clinical Medicine, Pathology and Hygiene will meet at 19 Boylston Place, on Wednesday, October 17th, at 8

Papers: "The Treatment of the So-called Incurable Purulent Pleurisies by Professor Revelliod's Method," Dr. C. G. Cumston. "Acute Leukemia," Dr. R. C. Cabot. Dr. J. J. Thomas will

open the discussion. Business: The election of the chairman of the Section. HENRY JACKSON, M.D., Secretary.

RECENT DEATHS.

OLIVER WENDELL HOLMES, M.D., M.M.S.S., died in Boston, October 7, 1894, aged eighty-five years.

ALBINUS OTIS HAMILTON, M.D., M.M.S.S., died in Dorchester, Mass., October 4, 1894, aged sixty-two years.

PROF. DR. LEMCKE, Director of the Polyclinic for Diseases of the Nose and Throat at Rostock, died September 13th, aged forty-four years.

HANBURY SMITH, M.D., of New York, died September 13th, aged eighty-four years. He was for some time superintendent of the Ohio State Lunatic Asylum.

BOOKS AND PAMPHLETS RECEIVED.

Tea and Its Effects. By James Wood, M.D. Reprint. 1894. Color-Blindness in Asiatics. By F. B. Stephenson, Surgeon, U. S. N. Reprint. 1894.

A Study of Scarlet Fever at High Altitudes. By J. N. Hall M.D., and Wm. P. Munn, M.D., Denver, Col. Reprint. 1894. By J. N. Hall,

On Epilepsy in Early Life, with Especial Reference to the Colony System in the Care and Treatment of Epileptics. By William Philip Spratling, M.D., of New York City. Reprint.

Original Articles.

THE EDUCATIONAL ASPECT OF COLLEGE ATHLETICS.

BY W. M. CONANT, M.D., BOSTON.

THE chief consideration of any young man should be health. . The first consideration of a parent for a young child is that it be healthy; and any education that is not healthy, or does not promote the health is not wise, no matter from what source it comes. three things which lead up to health in a child are plenty of food, a sufficient amount of exercise, and some form of stimulation. It is a well-known fact among educators of children that much of the teaching of a child in the past has been wrong, and in many cases pernicious. There is a growing feeling among men interested in this subject that many of the cases of chorea seen in young children are often due to improper methods of instruction in the schools. When it is remembered that the muscles are one-half the total weight of the body, it will be seen without any argument that good food is one of the main essentials of health; when it is further remembered that one-third of the nutrition of the system is spent in the repair of the muscles, it will become more evident that the muscles play a much more important part in the human economy than most men have been willing to grant.

At the present time there is a growing tendency among the educators of young children, to make use of what is known as the free-arm movement. This is now used in England, on the Continent, in France and Germany, and is beginning to get a recognized place in this country. This movement is based on the well-known fact that in early life certain motor areas of the brain have not been sufficiently developed to allow of their excessive use. It is a well-known fact that the more skilled movements of the arm and of the hands, do not come until the child is well along toward puberty or even later in some children. It is this fact that has made certain teachers object to many phases of the Kindergarten system, especially that part which has to do with minute manipulations of the fingers, either in weaving little mats or in modelling small objects in clay. Anything which requires over-nicety of the fingers is a strain on the physiological nature of the child. So, too, the old forearm method of writing, if carried to excess is unwise, because all the areas required for this style of writing are not thoroughly developed in a young child. It is for this reason, therefore, that it has been at last recognized that there is a certain distinct relation between the motions of the muscles and the capacity of the brain to furnish a sufficient amount of strength to move said muscles. It is for this reason that at the present time the gymnastic exercises in the schools on the Continent and in Eugland, and in some parts of this country, have been thoroughly graduated, and it has been found that certain plays develop certain parts of a child, and that certain other plays are of distinct disadvantage to the same child. Therefore, there has been a distinct and careful scheduling of said plays; and it is possible at the present time to obtain charts giving certain forms of plays which are suitable for children of a certain age, and there is another set of plays which must be taken up only when the child is further advanced.

¹ Read before the Boston Society for Medical Improvement, May 14, 1894.

Many of us have been in the habit of looking upon athletics as a "fad"; and while we have been willing to admit that they may have been useful in a certain number of cases, we have been loth to believe that what are commonly called sports and games, have any decided educational advantages. If we grant, however, that in all education the first consideration is the health; if we grant that the health depends upon good food and upon a proper amount of exercise, together with some stimulant for the child to take such exercise, then it seems to me, we must approach the subject of college games in a more serious manner than has been our wont. It is possible that after a time we may be willing to believe that the college sports and games, when not carried to excess, become one of the very best methods of getting a proper amount of exercise needed for health. If it is true that a child needs a certain amount of daily exercise so that there shall be a proper use of the muscles, and so that the functions of nutrition shall be properly worked, how much more important is it that the man who is expected to spend a certain number of hours in hard, laborious brain work, should need or even demand a certain amount of daily exercise in order to keep the system in a healthy state. Otherwise there is great danger that the physical side of the system will suffer as the intellectual improves. No one, I think, will for a moment gainsay that a man or a youth with acute dyspepsia and a small, emaciated frame, is ever likely to give rise to any great thoughts. If these things are true of young children, that they need this careful and intellectual oversight that there shall not be any overdevelopment of the physical and so tiring the brain of nervous force, how much more is it true of young men and youths at the average age of entering college, who are not possessed with the same effervescence of spirit that a child has after it is freed from school.

There is no question in the minds of both physician and of the educator of children that the old system, sometimes spoken of as the "sit-still system," has done a very great amount of harm to children while they are growing up. This is best seen by that nervous, restless, easily excited condition which a child gets into from the very fact that it has this repressed feel-How much wiser is it to allow the child a certain amount of free-arm movement even in its plays and in its daily life, than to keep it cramped up within certain bounds. To one who has had experience in athletic training the set and daily practice of certain forms of athletics known as gymnastic training, have been extremely difficult to keep in force from day to day. Some form of stimulus, like the desire to emulate some other boy on a football team, or on a crew, or on a nine, has been needed. It is a well-known fact that a large proportion of the athletic work done in most of the gymnasiums, is done largely with the idea of getting well in trim either for some sport or to take part in some contest. If one goes so far as to believe that a man thinks with his muscles, he is forced to admit that an amount of muscular activity when not carried too far, means brain development. There are certain prominent teachers at the present time, who claim that with every act or thought there is a corresponding muscular action. Whether one believes this to the full extent or not, there can be no question that muscular action develops cerebration and that the man who is muscularly tired is usually mentally tired; and it is a curious phenomenon that a man may to all

appearance be in a perfect condition physically, but the mental condition may be so far overworked that there is no response when muscular action is required. This intimate relation between the muscular system and the brain, and between the brain and the muscular system, has too often been overlooked, and we have been too ready to consider that a man who has apparently what is known as "brute strength," is therefore much more preferable than a man who has what is known as "nervous strength." The highest form of muscular development is that form in which the nervous strength predominates over the muscular and is practically the true physical strength of the youth. Let us examine this relation between the muscles and the brain a little more closely; and in doing so it is my purpose to make use of an article by Dr. Hartwell which was published in "Hare's System of Practical Therapeutics." While his exact words will not be quoted, his idea will be used.

The bones and the muscles constitute the working force of the body, and the obvious results of proper exercise are the growth of these two forces; but these forces are ruled by the nervous system. Foster in his "Text-book of Physiology," claims that the whole of the rest of the body is used: "First, in the preparing of raw food and so bringing it to the nervous and muscular tissues, that these may build it up into their own substances with the least trouble; and, second, in receiving the waste matters which arise in the muscular and nervous tissues and preparing them for rapid and easy ejection from the body." The muscular system, therefore, has two servants: one that serves its food, the other that takes away the refuse; each helps the other as well as the muscles, and all are controlled by the nervous system. The movements of the muscles allow them to take up a proper amount of proteids, fats and carbon-hydrates, and while resting forms nitrogenous waste and gives off carbonic acid.

Next to movements due to muscular action, the most obvious results of exercise are increased circulation and ventilation of the blood, and are either direct or indirect; the most important direct being greater flow of the blood and absorption of oxygen and food materials. The most important indirect are improved nutrition, enlargement of the body, and improved The result of direct and indirect effect of exercise upon the nervous system has been omitted in the above, because the most important, and will be spoken of a little later. The direct efforts of exercise upon the circulation and respiration have been spoken of by Foster as follows: "The capacity for arduous muscular labor is determined not by respiratory mechanism alone, but by both, and especially by working together in harmony and concert. The quickened ventilation would be idle unless it were accompanied by a quicker circulation, and a quicker circulation would similarly be of comparatively little use unless accompanied by increased ventilation; and, as a rule, it may perhaps be said that when two men differ in capacity for strenous work, such as running a race, the difference though it is often spoken of as wind or power of breathing, is in reality not a difference in ventilative capacity, but a difference in the power of the heart to keep up and work in harmony with the increased respiratory movements."

After good food, nothing so promotes the normal growth and development of the body as well-regulated muscular activity. Thus far nothing has been said of

the effect muscular exercise has on the central system. The nervous aspect has often been overlooked by Maclaren defines exercise as writers on this subject. "muscular movement," and declares its object to be "the destruction and renovation of tissue." This is the ordinary view taken by many text-books on physiology. It is therefore not strange that school-teachers and teachers in gymnasiums believe this to be true. not true, however, and it can be demonstrated that fencing, swiming, running, etc., are much more exercises of the central nervous system than of the muscular system. They all demand a certain amount of muscular power, but they also demand much more than muscular power. A muscle is not a simple organ, but is made up of two distinct, though united, mechanisms; the muscle proper, and the regulating mechanism, which consists of nerve-fibres and gray nerve-cells. Each has its own blood-vessels and lymph-capillaries. If in life the two become disjointed, or if either suffers from improper nourishment, lack of exercise or structual loss, the duality is thrown out of gear and its work is either upset or abolished, in much the same way as when an attempt is made to split a human being into a mental half and a muscular half, and endeavor to train each half to act as if whole.

Herbert Spencer's "Law of Evolution," as applied to the nervous system, is as follows: "A progressive integration both of structure and function, during which there is a passage from the uniform to the multiform, the simple to the complex, from the general to the special. During the evolution of the nervous system the fundamental portion is first developed. The nervous system of man is at first similar to that possessed by animals which possess a nervous system, or, at any rate, all those who are sufficiently elevated to possess a spinal cord; but as development proceeds, the nervous system of man becomes gradually differentiated from that of an ever-increasing number of the lower animals, while still maintaining a general likeness to the nervous system of the higher animals up to the time of birth. This, then, constitutes the fundamental portion of the nervous system of man; but after birth the accessory portion, which up to this time appears in a rudimentary condition, now undergoes progressive development. It will thus be seen that the fundamental port:on is first developed, and that superaddition of the mental portion greatly increases the multiformity or compass and the specialty of the human nervous system, and that it is the latest product of its evolution." Ross says, regarding the difference between accessory and fundamental functions, as follows: "The movements of the hand afford the best example of the accessory functions of the spinal cord. These movements are peculiar to man, and by far the greater number of them are acquired after birth. therefore, be expected that the development of the structure which represents these movements in the spinal cord will also take place after birth. movements most characteristic of the upper extremity are supination and pronation of the forearm and special complicated movements of the hands and fingers. These cells appear at a late period of the development of the cord; hence, they form a specialty of structure which corresponds to some specialty of function. These cells remain small in the adult, and consequently may be expected to preside over the action of small muscles."

It is evident that the arms of a mechanic and those

of a ten-year-old boy differ greatly in size and strength, but the difference which exists between them lies in the nervous force which represents the movements of which their respective muscles are capable, rather than in the muscles themselves. Not only are the motor nerves of the mechanic larger, but the cells in the motor areas of his brain and spinal cord are also more numerous and more widely connected with other cells. Exercise plays, if not the greater, a very considerable part in producing this result.

Sir James Crichton Browne says: "These facts, that cerebral centres never properly exercised do not develop, and when once developed they are not so liable to waste on the withdrawal of appropriate stimuli or when cut off from their natural activities, strongly inculcate the importance of educating every centre at its nascent period, and the danger of postponing education until the nascent period is over. A large district of the brain is made up of motor centres and is concerned with motor ideas. The growth of that district is evidently to some extent dependent upon muscular exercise, and if that is withheld at the growth period, the The differdevelopment of that district is arrested. ences which we notice between man and man in deportment, gait and expression, are but the outward and visible signs of individual variations in the development of the motor centres of the brain; and the stammering, grimaces and antics, which are so common and annoying alike to those who suffer and those who witness them, are probably, in many instances, the effect of neglected education of some of these centres, and might have been abolished by timely drill and discipline."

All this points to the fact that muscular exercise demands more careful attention than it has yet received. Exercise has a twofold effect upon the muscles, first strengthening the health of the nervous muscular mechanism, and a special effect, namely, the beginning, transmission and regulation of stimuli. Exercise. therefore, has for its aims the promotion of health and the acquisition of correct habits of action. The first is hygienic; the second is educational. True education has, therefore, for its main object the proper development of the nervous system. The principles of all forms of physical training, however various, are based upon the power of the nervous system to receive impressions and to note them or their effects. It is high time that our colleges dealt with this matter as it deserves. It must no longer be left to the whim and judgment of persons not fitted to deal with such problems, but it must be handled with patience and by the use of intelligence, organization and money. At the present time it will not do for any college or university to look upon it as not worthy of very careful consideration. It is not necessary for the colleges to turn out specialists in any special sport; what is demanded is, that there shall be general bodily training which has for its principles a regular system for the attainment of Dr. Hartwell says: "Pastimes, out-of-door sports and systematic gymnastics are the forms of exercise which yield the best results in the physical training of school-children and college students. The plays of the kindergarten, the athletic sports to which British and American youths are so devoted, and the systematic gymastics of the Swedes and Germans, have all developed from one germ, from healthful play. The vital energy of this germ is found in the universal and un-

The children of every generation are playing animals. That it is so, is a most fortunate thing for the race; were it not so, the victims of war, pestilence, of education and of business, would be vastly more numerous than they are."

In what follows I wish to show that the athletics in colleges must be divided into different grades, some of which are harmful to certain men, but are not harmful to the right men. And further, that a man should be required to pass through each grade before he is allowed to take part in the more severe contests. The athletic work of any college can be divided into the indoor or gymnastic training, and the outdoor sports, such as baseball, football, rowing, tennis, and track athletics, cricket, etc. Of this, let us first consider what can be done by gymnasium work. Any man who is acquainted with the workings of any large gymnasium must have seen a very considerable number of men who are using forms of apparatus which are totally unsuited to their needs, or else are using the proper apparatus improperly. This must necessarily be true where there are a large number of men at active work, and where the instructors are but few. To get the greatest good out of the gymnastic work it is important that every beginner after having been properly tested, should be thoroughly and accurately drilled in the form of gymnastic exercise that he is to be allowed to take. His muscular system must be tested often enough to give an idea as to whether the form of gymnastic exercise prescribed is having the desired effect or whether it is operating in an unwise direction. There can be no question that on the hygienic side there is much to criticise in most of the gymnasiums one sees at the different colleges. The foul air due to a large number of men, and the fact that the exercising clothes are usually kept in the buildings, are very unpleasant facts, and a source of dissatisfaction to any person who wishes to see the highest good obtained from this form of work. Then, too, the lack of proper and careful instruction which is found in most colleges must always be a drawback to most gymnasium training as seen in our American colleges. Some system like the Swedish or German, or some combination of the two, with the adaptation of the best parts of other systems, will furnish in the end the greatest amount of good to the masses of students.

Much of the gymnastic work which is now done indoors in many of our Eastern colleges could be just as well or even better done by having the simpler forms of apparatus placed outside until late in the fall, and then put out early in the spring, thus enabling men to get the benefit of pure air during their exercise, and at a time when the lungs and the circulatory system are most liable to take that which is bad as well as Until some form of gymnastic that which is good. work can be devised which in itself will be attractive or which will lead up to some form of other athletic training, it hardly seems possible that in our colleges, at least, we shall find the gymnasium a popular place, per se. I recognize that a large percentage of the men in many of the colleges do a considerable amount of athletic work in the gymnasium; but most of this work is of a special sort, and is intended by the men to get them in shape either for the crew, the nine, the football team or some other form of outdoor sport. One is struck after visiting Oxford and Cambridge to find how little attention has been given to this side of an controllable impulse of all healthy children to play, athletic training, and how much attention has been

given to the development of games and field sports. Neither at Oxford nor at Cambridge is there a building which in even a small New England college would be considered a respectable gymnasium; and it is a common thing to find that most special sports like cricket, lawn tennis, court tennis, rowing and other forms of sport, have special buildings, devoted to their own special sport. Whether this is wise is an open question. There have been a great many criticisms made upon this lack in the general gymnastic training of the British student, and it has been thought that too much time has been wasted on the sports, so called. seems to me that it is a question open to discussion, and one which will bear a very considerable amount of argument on both sides. The whole thing must depend largely upon the line of physical training that one wishes to pursue. If one goes in simply for exercise without any other qualification, you will expect him to do certain things. If, however, in addition there is the attempt at regular and systematic development, not only of the body but of the mental faculties as well, one must have, in order to get the highest good from such training, a certain amount of stimulus in the This fact must always be borne in work to be done. mind in any form of college athletics; and it is for this reason, therefore, that any form of physical training which would be in itself compulsory would, to my mind, defeat in a large measure the end at which it is aimed. Men who are not interested in any given subject do not usually develop in that line; therefore, if we wish to make our gymnasium attractive, there must be some method, some system, and certain results shown, which prove beyond question that it possesses certain attributes which make it superior to any other form of athletic work.

Of the outdoor sports, tennis and cricket are of such a nature that there very seldom arises any serious disability. They are, therefore, sports that can be recommended; and, as a matter of fact, tennis especially is very largely played by men who take no other A large part of the work form of athletic exercise. done in tennis is done simply from the love of the game and by men who cannot play well enough to have any possible chance of being competitors in intercollegiate It has, however, been found necessary to add even to this sport some form of stimulation which shall bring out the class of men worthy to uphold the reputation of the sport, and this is usually done by one or more tournaments and by grading the men according to their expertness at the game.

Track athletics, rowing, baseball and football are the most severe and arduous sports, and have the severe element, not only of competition among themselves, but with other universities. It is in this competition that both the danger and the great incentive to con-In all these sports it is absolutely necessary that an examination of a man's physical condition should be made, and before he is allowed to take part; a certain per cent. should be required before a man can play on a Class or 'Varsity team. This is only one way of correcting a possible source of evil; vision over the players, and special attention must be and this is due partly to the fact that the passing a given to their condition both mental and physical, betest is one that is easily acquired and may be no true cause, oftentimes, a man in fair condition either mental indication of a man's condition, or of his ability to or physical, may receive a severe injury. take part in prolonged physical work. Another fact been said about the severe injuries from which players is that in many cases the work on the team demands suffer; it has been thought interesting, therefore, to more physical effort than he can give and remain in insert the following table of injuries received by the

or some test must be applied to see whether he is competent to continue in that position. In these sports the results of careful work in the gymnasium begin to bear fruit. The man who enters the sport in the best condition, other things being equal, is the man who does the hardest work and is the most valuable man to the team.

Track Athletics. — This form of physical training demands the care and attention of a man thoroughly versed in the best methods of training his men; more probably depends upon the individual character of the trainer in this sport than in almost any other form of It is largely a sport of individual deathletic work. velopment where each man comes under the eye of a skilled and careful trainer, who advises what is best for his interests, and corrects any tendency to error which he sees. It is, to my mind, one of the most satisfactory forms of sport in which a man can engage, because the time for training is comparatively short and the amount of physical effort is not long sustained, and the general condition of the work does not seriously hamper a man from attending to his regular studies.

Of the other three sports, namely, rowing, football and baseball, we have the hardest form of athletic exercise entered into by college men. From this fact alone a large number of men are necessarily excluded, and it is only a certain number of picked men from the whole mass of students that are able to take part There is no question at the present in these contests. time but that rowing develops a man in an all-round way better than either of the others. Football comes next and baseball last. In the training of a crew there is a great amount of severe muscular and mental strain. It therefore makes this form of exercise all the more dependent upon a careful selection of the men and strict attention during their training that no injury shall be done. The greatest fault of the American system in the training of our crews is that we have no opportunity for stimulating the men, during the long period of training, by contests with other crews. This form of exercise requires a greater regularity of life over a longer period than any other form of athletic work, and it is not therefore strange that of all athletic teams the crew should hold the place of honor. Certainly they richly deserve all the honor given them.

The football work comes at the very best time in the year. The men begin their work after a long vacation and at a time when the weather is constantly There is, however, a considerable growing cooler. risk of injury in the game, especially to the green men who have not been carefully trained in the sport either at some preparatory school or on some school team. The great competition for a place, with a large number of candidates trying, often gives rise to a severe mental strain. The game as at present played has much in its favor. No one can, I think, contend that it is not a rough game, but very few who know anvthing about the game believe it to be brutal. sport there is great need of constant and careful supergood health, and therefore, some form of examination Harvard men during the last four seasons.

cludes all serious injuries, as far as known, to both the 'Varsity material and men playing on their class teams.

LIST OF FOOTBALL INJURIES.

	1890	1891	1892	1803
Fracture of the nose	9	6	5	4
Dislocation of the shoulder	0	1	0	0
Dislocation of the elbow	0	2	0	1
Injury of the knee-joint with effusion	15	12	10	8
Injury of the knee-joint without effusion .	20	16	12	10
Sprains of the ankle	15	16	12	9
Fracture of the metacarpal	4	2	2	3
Fracture of the radius	0	0	9	1
Fracture of the tibia and fibula	0	1	0	0
Teno-synovitis	12	10	8	8
Sprains other than knee and ankle	10	6	8	7
Scalp wounds	4	2	3	3
Injury to shoulder (Tackle's shoulder)	ť	4	5	4
Severe contusions	6	7	5	5

There can be no question by any one who has carefully looked into the matter but that the class teams should pay much more attention to training in order to get the men into better physical condition to play so severe a game. Most of the injuries in the above list are injuries to men on the class teams. There have been very few, if any, severe injuries to the men on the 'Varsity team.

The game of baseball is one of the most popular of American sports. When seen as a college sport it has the disadvantage of having the severe work come at the time of extreme heat; moreover, this is the time of the annual examinations; and the combination of the games and of the examinations has a very marked effect on the condition of the men on the team. If men work until after midnight on their examinations, they are unable to get a sufficient amount of sleep for the next day's duties; and it is moreover true, that the lack of condition among ball men is not due so much to the game itself, or to the fact that the important games are played during the month of June, but rather to the combination of these two conditions with the annual examinations. In this sport there are a considerable number of injuries; not as many possibly as among football men; but when an injury does occur, it is apt to be of a more serious nature.

There is one thing, I think, which impresses itself upon the mind of any one interested in athletic work, and that is the importance of a man engaging in severe athletic training only a portion of the time. It is this fact which makes it seem unwise for any one man to remain in training the greater part of the year so that he may take an active interest in two great intercollegiate contests. This at once brings up the question as to the value of intercollegiate contests. Many men will admit that athletic contests between classes is a most excellent thing, but they would limit such contests and would not permit any form of intercollegiate contests. Two or three main points should not be lost sight of when this subject is under discussion. First, that intercollegiate contests are the means of education outside of the physical work done. Second, they are the great stimuli which bring about the highest form of athletic work, as shown in the special teams prepared for the contests; they also act in keeping up the athletic interest among the class teams and in athletics generally. Third, they accomplish the best results in our college sports. There can be no question but there are certain drawbacks, but these can all be kept in the background by proper legislation and by strict accountability on the part of the teams contesting.

Another question which is giving rise to a very considerable amount of discussion, is the question of paid coaches. If one believes that athletics are one of the means of educating a young man, there can be no reason given why the best means should not be employed to teach a given athletic subject. There is no reason why if the track athletic team has a paid coach for trainer, the crew, the baseball, the cricket or the football teams should not have the same; and it should make no difference whether the man who can give such instruction is a graduate or not. If he is competent to fill the position and his time is taken from other work, he should be paid, as is any other instructor in any other form of education. Until this fact, that the men are being educated, is made more prominent, there will always remain the feeling that a man who is proficient in baseball, in track athletics, in rowing or in football, must, if called upon, give up a certain amount of otherwise valuable time without any compensation. This has been done in the past greatly to the credit of many men, but the exactions of the details of the sports at the present time are such that very few men, if they have anything else to do, have the time to devote to athletics without a considerable loss to themselves. If no money was charged for admission to the sports, it might be necessary for men to give their time; but with a large income from the different sports, there seems to be no necessity for such a condition.

One great fact found when discussing athletic training is the belief that it is only sport for the young men thus engaged. That athletic training has any educational value many men are unwilling to believe. When the colleges fully recognize this educational aspect of the subject, we shall have the athletic work a part of the college instruction, and all the sports will be used to bring out what is best in a man; and thus there will be a unity of purpose which is now lacking. It is to be hoped that the day will come when the men in charge of our colleges will take that interest which will lead them to inform themselves upon the value of athletics and give it the consideration which the subject demands. Then we shall have the athletic teams under the charge of an appointed authority, and the money now collected by each team will be used as a common fund for the best interests of all the college sports. When this is done, many of the abuses which now exist, and which could be very easily removed, will pass away. It lies with the college faculties to stop much which has been charged against the fair name of athletic sports, and it is for their interest to see that on them must rest the responsibility, because it is not the athletic men who are guilty of excesses, but the followers who are ever ready to indulge in forbidden pleasures. One method of doing this is to restrict intercollegiate contests to the grounds of one or the other contestants.

One other factor must not be lost sight of in considering this question, and that is, the condition to which an athletic training brings a man after he has left his college career behind. I think it is not claiming too much to say that many a man feels that his success in after life is due in a great measure to the excellent condition of his mind and body brought about to a large extent by athletics which he followed when in college. Certainly it is an interesting study to look over prominent men in my own profession, and see how many of them were active and enthusi-

astic athletes when in college, and at the present time still retain a very strong love for athletic sports. Nor is it confined entirely to the medical profession; a large number of the prominent lawyers and clergymen of my acquaintance have been active and prominent athletes when in college. The athletic training which a man receives in his college course never entirely leaves him in after life; and although he may find his time somewhat occupied by important work, still he finds an opportunity for indulging in some form of athletic work which keeps him physically a healthy man, and mentally a bright one. How many are there of us who have indulged in athletic work that do not look back with pride to the time when we were taking an active part in athletic contests? and how many are there of us who would be willing to forego the memory of that time because of the possibility that we might have received some injury? Certainly the satisfaction to be derived from the contest, and the strength obtained from the training are out of proportion to the injury which may arise.

POSITION IN THE TREATMENT OF ELBOW-JOINT FRACTURES: AN EXPERIMENTAL STUDY.1

BY H. L. SMITH, M.D.

THE series of experiments here reported was undertaken with the view of determining, if possible, at what degree of flexion of the forearm, in the case of fractures involving the elbow-joint, the fragments were held in the best position. Such an investigation would seem to be desirable if only from the fact that there is a wide difference in the practice of com-While it appears from Robert's petent surgeons. paper read before the American Surgical Association two years ago, that the majority of practitioners dress these injuries with the arm at right angles, there is a considerable proportion (15 out of 88) who prefer to fix the forearm in the extended position. Of 65 who used the right-angled position, 37 did so because they thought it insured better coaptation of the fragments; while of the 15 who advocated the extended position 11 gave the self-same reason, namely, that the fragments were by that means more easily reduced and more accurately retained. Evidently both cannot be right.

So far as the writer is aware, no actual experiments have been made hitherto to determine the true facts in the case. It is not claimed, of course, that the conditions of a recent fracture can be exactly reproduced in the experimental work on the cadaver. The latter has been done on adult arms; the majority of the former are in children. One attempt was made to cause a fracture in the manner in which it usually occurs as an accident, but the thickness of the bones made it well-nigh impossible, and the method to be described was used instead.

When the series was commenced the writer had no positive convictions as to the results he might expect to obtain; and, as a matter of fact, the conclusions reached, and the method of treatment which he has been led to adopt in all elbow-joint fractures were the outcome of these experiments solely.

The undesirable results in the case of elbow fract-

and before the Surgical Section of the Suffolk District Medical 'y, January 3, 1894.

ures are due usually to one of two things; (1) limitation of motion, (2) reversal of the normal humeroulnar angle.

No doubt all would agree that the former of these factors is the one most to be avoided, but there are surgeons who consider the second alone of sufficient importance to be given as a reason for a special mode of treatment, namely, that by extension. Any method, therefore devised for the treatment of these troublesome injuries, must be one which shall obviate, so far as that be possible, both these unwelcome results.

METHODS.

The first experiments were made upon undissected The desired fracture was produced by driving an osteotome through the condyle with a mallet, a vertical incision, about a centimetre in length, having first been made just above one or the other epicondyle. After the chisel had been driven as far as was deemed necessary, the fragment was separated by prying. The fragment was then carefully examined as to its position, ease of displacement, best method of reposition, etc., in all positions of the forearm, from complete (forced) extension, to acute (forced) flexion. The same study was then made after the skin had been turned back, leaving the muscles exposed. Next the various muscular layers were removed in turn until the behavior of the fragment when covered with the ligaments and capsule only could be studied. Finally the ligaments were cut, and the exact variety of fracture noted.

Later experiments were made with arms which had been partially dissected, and for the opportunity of using these, I am indebted to Professor Dwight of the Harvard Medical School. In these cases a method frequently employed has been the cutting of windows in front or behind the joint, and in this way it has been easy to study the behavior of the fragment with the least disturbance of its surroundings and attachments.

The experiments number in all twenty-four. Of the internal condyle there have been seven; of the external condyle, four; of transverse fractures across the lower end of the humerus, four; of "T" fractures, four; of the internal epicondyle, two; and of special fractures with certain additional injuries for the solution of special problems, three.

INTERNAL CONDYLE.

Experiment, August 14, 1892. Male adult. Left arm. Rigor mortis almost absent. Thoroughly broken down. Vertical incision, one centimetre long, just above internal epicondyle. A Macewen's osteotome introduced, and driven downward and inward, the condyle being broken off by

prying with the osteotome.

With the arm extended there is increased lateral mobility of the forearm at the elbow, and crepitus can be felt when the fingers are upon the tip of the olecranon. By lateral pressure the humero-ulnar angle can be decreased and restored again. The external lateral ligament seems to prevent the forearm being brought farther than to a straight line with the humerus. With the forearm flexed to a right angle, the olecranon and fragment of the internal condyle can be displaced backward. With the arm extended this is not possible.

Skin reflected by an H-incision. When the arm is extended the muscles in front of the internal condyle are made tense over it and bulge forward, owing to the fact that the broken fragment tends to rotate forward, with its upper, broken surface looking forward and upward. It is held so rigidly in this position that it is difficult to replace it. When the arm is flexed to a right angle the tissues are loosely held, and replacement is easily made by pressure downward and backward upon the condyle. This can best be done by extending the arm and making as great a " carrying angle" as possible, and then flexing it steadily while the thumb of the other hand presses downward and backward upon the tip of the condyle, or upon the upper part of the shaft of the ulna. During this movement the forearm should be brought from a position of supination to one of semi-pronation. If then the same motion is continued to an acute angle, the internal condyle is kept firmly locked and held in its normal position. It cannot be dis-lodged from its position even by a very considerable force applied directly to it. If the fragment be fixed in this position by the fingers, and the forearm be extended without dislodging it, the humero-ulnar angle is found to be normal. In the extended position the fragment is invari-ably both rotated and bodily carried forward, and cannot be replaced until the forearm is flexed. The mobility of the fragment is greatest at the position of right angle, and then it steadily becomes less until an angle of a little more than 45° is obtained, at which point it is almost impossible to move it.2

The muscles are now stripped away in front of the joint, exposing the ligaments and capsule. In the extended position the fragment is in position only when the forearm is adducted in such a way as to decrease the humeroulnar angle. If the forearm is carried outward so as to increase this angle, the broken surfaces are separated as much as a centimetre very easily. A very slight movement of the hand outward causes the tip of the olecranon to press the fragment out from its normal position, leaving the above space between the broken surfaces. Close apposition is retained only by bringing the forearm inward as far as possible. If the fragment has already rotated forward in the manner described above, the arm being in the extended position, and if then the forearm is flexed to right angles without any special precautions, the fragment may retain its rotated position, the broken surface of the lower fragment still looking upward and forward. If, however, during the act of flexion, pressure is made downward and backward upon the internal condyle, or upon the ulna, this position is remedied. This manœuvre is best accomplished if the forearm is semi-pronated. The lateral ligament holds the fragment of internal condyle close to the ulna, from which it is never separated.

The capsule is now cleaned off thoroughly. It is very easy to displace the whole fragment forward. This is done by pressure upon the olecranon when the arm is extended, or by supinating the hand forcibly, thus twisting the ulna around the radius. When the hand is semi-pronated this is avoided. When the forearm is forcibly adducted so as to destroy the normal humero-ulnar angle, the fragment is displaced forward as well as upward, a very slight amount of motion of the fragment in this direction making a considerable deviation in the direction of the forearm. Simply putting the arm in the extended position, without carefully pressing the ulna backward at its upper end is not sufficient to reduce the fragment. The latter is more apt to be displaced than in the right-angled position, for the olecranon is naturally pushed forward, and there is no leverage for preventing it.

After repeated observations the following conclusion was found to be true: by bringing the forearm into the acute position, with the downward and backward pressure in front of the internal condyle, and with the forearm semi-pronated, the deformity is always reduced, and the fragment is firmly locked in position.

The line of fracture is found to terminate below at the dividing line, between the trochlea and the capitellum.

The result obtained in this experiment was entirely unexpected, and the exactness with which the broken fragment was brought into its true position, and the absolute firmness with which it was held there was

² In this paper all angles are measured from the axis of the humerus, as a zero point, and not from the position of right angles.

very surprising. The ground was gone over again and again, and in every instance with the same result. Just what tissues acted as the controlling force in this locking of the fragments could not be determined from this experiment alone. That point will be discussed later.

Experiment, September 24, 1892. Male, of large bone and muscular. Vertical incision above internal condyle; chisel introduced, and a fracture produced, with a distinct crack.

With abduction of the extended forearm, combined with a slight amount of flexion, the olecranon is thrown out of its fossa, causing it to protrude on the inner aspect of the arm beyond the internal condyle. This dislocation is very easily produced. With the arm forcibly extended the internal condyle is firmly fixed, apparently by the muscles passing in front of it. With the finger in the wound, which is made just large enough to admit the tip of one finger, the fragment is felt to be displaced forward and also, apparently, rotated on its lateral axis, so that it projects about a centimetre beyond the broken surface of the humerus above. The external lateral ligament is felt to be fairly tense.



FIGURE I.

With adduction carried as far as possible, so that arm and forearm appear to be in the same straight line, there is a slight separation (half a centimetre), between the fragments at the innermost edge. If the forearm is abducted so that it reaches an angle corresponding to the sound arm, the fragments are separated so as to admit the tip of the finger or at least a centimetre. If an attempt is made to replace the fragment in position, while the forearm is somewhat flexed, and extension is again made, the displacement invariable recurs with the same results as before.

With the forearm slightly flexed (160), the forward rotation can be corrected by pressure on the upper edge of the fragment with the finger in the wound, but it is done with great difficulty or not at all when attempted from outside the skin, and in any case returns at once when pressure is omitted. Displacement forward is more marked than before, and can best be reduced by semi-pronation of the forearm. Complete supination is certain to cause this separation to the extent of one centimetre. If the forearm is strongly adducted, making the whole arm straight, the fragments are held together, but the forward displacement is not corrected. With the forearm carried outward to its normal angle, the whole index-finger can be placed between the fragments. Slightly forced supination makes the anterior displacement very much greater.

Further flexion of the forearm increases the mobility of the fragment, until the right angle is reached, when it suddenly, from a condition of free mobility in all directions, becomes quite firmly fixed, allowing only a slight forward and backward rotation on its lateral axis. There is a slight amount of forward displacement, but it can be easily reduced by the finger in the wound or from without, and does not tend to recur. The manœuvre of replacing it is as follows: Grasp the back of the elbow with the palm of the left (with left elbow) hand, the thumb reaching around in front of the ulna. Make pressure downward and backward with the thumb, at the same time flexing the forearm with the other hand. The best position is obtained with the forearm semi-pronated (see Figure).

Flexion to less than a right angle. If at 60°, the result is the same as with the right angle, except that the fragment is held more firmly, apparently by the action of the triceps. If flexion is carried to 45°, the fragment is firmly

locked in excellent position.

The skin is now reflected, and the whole ground gone er again, with exactly the same results. The muscles over again, with exactly the same results. The muscles attached to the external condyle are now cut through, but the results already obtained are unchanged. The tendon of the biceps is divided, but the same facts are observed in each position.

The muscles are now divided down to the capsule in front. There is a greater possibility of anterior rotation, but in the position of acute flexion the fragments are firmly fixed still. The anterior ligament is now divided along the line of fracture, but the position still remains excellent.

The joint is opened, and fracture found to terminate below at the groove inside the capitellum.

In this case the fact was brought out very clearly that it was extremely difficult to bring the fragments into position while the forearm was extended.

Experiment, Harvard Medical School, November 3, 1893. Muscular man. Left arm. All muscles in position. With chisel the internal condyle is broken off obliquely into the joint. The line of fracture is found later to run to the middle of the trochlear surface below. In extension the fragment is movable in every direction. In the rightangled position the same is true. In acute flexion it is held firmly in place.

The lateral and anterior ligaments are cut, without affecting these results. The external condyle is now fractured in the same arm. It is also freely movable except in acute flexion. The triceps is now cut through, leaving the posterior ligament, and the results remain unchanged.

Elbow is now stripped of everything except the posterior ligament. In the extended position the fragments are widely separated from position, and dangle loosely, but when the manœuvre already described is gone through with, the parts come into place perfectly.

In four other cases of fracture of the internal condyle a similar study was made, with slightly varied conditions, such as making windows in front of the joint, cutting different ligaments, muscular structures, etc., but the results were so uniformly in accord with those of the preceding experiments that they will not be given in detail.

EXTERNAL CONDYLE.

Experiment, August 25, 1892. Adult. Left elbow. Rigor mortis present. Broken down. Vertical incision, one centimetre long, with its lower border one centimetre above external condyle. Osteotome introduced, turned to right angle, and condyle chipped off apparently into the joint.

Condyle movable, though not easily. Crepitus most easily obtained by going through the motions of extending and flexing the forearm. Line of fracture can be distinctly felt through the skin. Least mobility when forearm is

full extension and a right angle. No abnormality of relation between bony outlines discovered by feeling.

H-incision and flaps of skin turned down and up. In the right-angled position backward pressure on upper end of radius easily causes separation of the fractured surfaces. With the arm in position of acute flection, interval is not so

Muscles divided down to capsule, and reflected. With abduction and adduction of forearm (side to side), the broken fragment closely follows the head of the radius. Broken surfaces easily separated half a centimetre, on firm adduction, with arm extended. With arm at right angles, hand supinated, a slight amount of pressure downward on head of radius separates the fragment, so that the little finger can be introduced between the bones. With the same pressure, if the hand is pronated, this separation is not produced. If pressure is omitted, the forearm being pronated, the fragments approximate each other. With the arm acutely flexed (45°), the fragments remain in good position. Downward pressure on the head of the radius then causes only slight separation.

At this point the osteotome was re-introduced and the fragment more thoroughly freed from the rest of the humerus at its inner end, where it seemed to be slightly adherent. In the extended position the fragment is in fair place, with separation of one centimetre. At the rightangle position the separation is wide, and can be decreased only by upward pressure on the radius. In the acute position the fragment is brought into position automatically, and cannot be displaced. No anterior displacement in full extension. With the arm fully extended, and abduction and adduction performed, there is a motion of about half a centimetre between fragments. At right angles, with upward and downward pressure on the radius, two centimetres is possible; in the acute position almost nothing. In flexion of two to three degrees from full extension, that is, as soon as the olecranon is slightly freed from the fossa,

the displacement is as great as at right angles.

Capsule cut anteriorly, leaving those fibres connecting the fragment and the radial head. The line of fracture runs across anterior surface of capitellum, its lowest point reaching a little beyond the centre of the trochlear surface.

Experiment. Right arm. Rigor mortis. Broken

down. Same incision as before. Intention is to break off less of condyle. Fragment distinctly movable, particularly when arm is half-way between extension and a right angle. In acute flexion it is firm, as before.

Skin reflected, arm extended fully. It is found that the fragment is carried forward so that the broken surface of the lower fragment projects in front of the upper. At right angles there is good position, the fragments being separated only slightly by downward pressure on the radius.

Muscles cut through above the joint and reflected downward, exposing the capsule. In the extended position the fragment is rotated outward and very slightly forward (can be moved one-half to one centimetre). With arm slightly flexed, so that the olecranon is free, the fragment is rotated still further outward, but can be approximated by forcible abduction, and separated one to two centimetres by adduction. At right angles, the movement is two centimetres, by upward and downward pressure on radius. Much better position when the arm is semi-prone than when supine, if same amount of downward pressure is used. With hand semi-prone and no downward pressure, the

fragments are in good position and held firmly.

Arm acutely flexed. Fragments almost perfectly immovable, in good position. When arm is in any position but complete extension and full acute flexion, it is perfectly possible to dislocate the fragment forward.

The surest manœuvre for replacing the fragment is longitudinal extension, with forearm extended, followed by flexion, the thumb at the same time making downward and backward pressure on the upper end of the ulna, the motion being carried to acute flexion.

Capsule opened leaving fragment attached to the radius. Line of fracture found to penetrate the joint at acutely flexed, greatest when the arm is half-way between the capitellum, its lowest point appearing at the line

of junction (externally) of the capitellum and trochlear surface. Joint forcibly dislocated by abduction and backward pressure. It results in displacement of the fragment so that the external condyle lies with its broken surface looking forward and lying in a plane posterior to the plane of the normal condyles. By flexing to right angles the fragment is brought nearly to position (half a centimetre) without other manipulation. If this motion is carried to an acute angle, the bones accurately approximate and are firmly locked. This movement is repeated several times with the same result.

From the foregoing experiments and from two others not detailed here, it would appear that acute flexion at the elbow serves to replace and retain the broken-off fragment of the external condyle as well as it did that of the internal condyle. In every case the fragment was firmly attached to the head of the radius, which it followed in all its movements, so that it became very easy, when the head of the radius was somewhat loosened, to displace the fragment forward in such a way as to prevent flexion of the forearm beyoud the right angle. The writer has met with this condition quite frequently in practice, and in such cases he has found that the use of the acute position becomes almost a necessity if the power of full flexion is to be retained, irrespective of the power of this position to hold the fractured condyle in place. It is in precisely this variety of fracture, namely, that of the external condyle, that treatment by acute flexion has been employed at various times in the past; and it is interesting to observe how fully this mode of treatment is justified by a theoretical study of the conditions present in such an injury.

TRANSVERSE FRACTURES.

Four fractures of this sort were made, the line of fracture usually running transversely just above the torchlea and capitellum. In one case the line was lower, passing through the capitellum, and this simulated more nearly the condition of the epiphesial separation. It is now the conviction of the writer, although he has not concluded his study of the subject, that the cases of "gun-stock deformity" occur usually after fractures which run completely across the bone, including in this list T-fractures and separations of the epiphysis, and that it does not occur as a rule after fractures of a single condyle. Such transverse or complicated fractures allow of considerable rotation of the fragment upon the long axis of the humerus. If this be the case, and then complete extension of the forearm is not recovered (the loss of the last few degrees of extension being very common, as the result of the filling of the olecranon fossa, or of adhesions, and usually being of little or no consequence so far as the functions of the organ are concerned), there results a deformity closely resembling a true reversed humeroulnar angle. Even where the deformity is due to the changing of the axis of the torchlea, the previous injury has been usually other than the fracture of the condyle in the cases (upward of one hundred) examined by the writer.

From purely theoretical considerations it might be doubted whether a distinct transverse fracture would be retained in good position by acute flexion - whether the lower fragment would not be tilted forward upon its lateral axis. This seems, however, not to happen, or at any rate to such a slight extent as to be safely disregarded in view of the firmness with which the | 1 Read before the Cambridge Society for Medical Improvement.

parts are bound together. The following is a type of the results obtained in this variety of fracture.

Experiment, November 6, 1893. Right arm. Muscle in place. Biceps only has been removed. A window is cut in front of the joint. Then with the chisel the lower end of the humerus is cut through just above the condyles. In the extended position the surfaces are separated for at least a centimetre, and are very movable. In the right-angled position the parts are brought pretty well into place, but can be displaced without much trouble. By rotating the forearm inward, as if it were placed across the chest, the lower fragment can be turned around upon its axis for twenty degrees (estimated), and then if it remains there the carrying angle is apt to be decreased almost to nothing, although it was not observed to become an inward angle. In the case of acute flexion the broken surfaces are brought into exact contact and held in place very firmly. In this position carrying the arm inward does not cause the same rotation of the fragment, because, apparently, it is locked in place.

(To be continued.)

TOTAL EXTIRPATION OF THE UTERUS BY A NEW METHOD.1

BY ALBERT H. TUTTLE, M.D., S.B., Surgeon to the St. Omer Hospital, Boston, Mass.

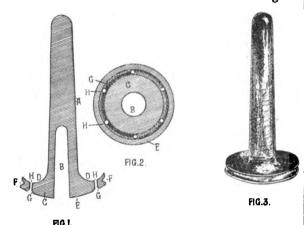
THE able description of Krug's method of total extirpation of the uterus and its excellent demonstration by Gustave Zinke at the Pan-American Congress recently held in Washington, aroused within me a feeling of interest in this subject I never before maintained, and seemed to me like a light in the horizon which betokened the birth of another brilliant day in the calendar of abdominal surgery.

After condemning to the terrible sufferings and agonies of the disease in its natural course to death, two cases of uterine cancer, which, even by our latest technique, were in an inoperable condition, and after noting a few scanty reports of combined methods of hysterectomy scattered in recent volumes of medical literature, I began to think seriously for the purpose of devising some method of operating which would admit of a more extensive dissection, and, with a reasonable amount of skill, might be made available for this class of cases.

By scanning the developmental history of hysterectomy, at the same time constantly bearing in mind the dangers and necessities of the operation, I have reached these conclusions, which I have put to the practical test and now respectfully submit for your consideration. The broad facts in the history of the removal of the uterus for disease are as follows: The earliest operations, where the uterus was only partially removed, were made by the abdominal route, and were for the relief of large tumors that menaced life. Later, the vaginal route was adopted, because it is especially adapted to the treatment of carcinomatous conditions, where the cervix is involved and the total extirpation of the uterus required. The recent advance to total extirpation by way of the abdomen seems to be an outcome of the problem of dealing with the stump which by the older methods caused a protracted convalescence, a frequent complication of ventral hernia, and a great mortality, rather than to meet such necessities as cervical cancer. The fact that the mortality is diminished to such an extent that a recent writer says, "In the hands of a skilled operator it ought not

to exceed that of uncomplicated ovariotomy," shows what an advance this is over older methods of hysterectomy. The convalescence is about as rapid as after normal labor, and there is not the danger of hernia that exists from an extra-peritoneal treatment of the fest; it makes the uterus firm, rigid and more easily stump.

A short time ago I attempted to remove the uterus, per vagina, in a woman about sixty years of age, but owing to a narrow introitus, which was not much improved by incision, and a very rigid condition of the vagina due to senility, I abandoned the operation after sewing up the os and making an incision through the vagina behind the cervix, and made a total removal by way of the abdomen. The staff used was improvised from a steel sound; and as the cervix was undefinable, the vagina short, and the separation of the bladder from the uterus consequently deep in the pelvis, I was in constant fear while making the incision through the anterior vaginal attachment of the uterus, that a fold of the empty bladder would catch over the staff and be incised. This experience led me to believe that a staff with an attachment to fit the canal of the uterus could be made which would accurately define the border of the cervix and serve as a guide



for making the incisions through the vaginal vault. After due deliberation, the question of sepsis from the uterine canal forcibly presented; and in order to meet this objection, the idea was conceived of hermetically sealing the canal by sewing in a hollow stem with a cap made to fit over the cervix. The stems were then cast and turned in brass into the following shape: the central cone (a) which fits into the uterine canal is three-eighths of an inch in diameter, and tapers down to one-fourth, and the length in three sizes is respectively one and three-fourths, two, and two and one-fourth inches. It is penetrated to the depth of one inch with a central cavity (b), which is bored with a three-sixteenths-inch drill and reamed out to onefourth inch at the orifice, ending blindly. The cap (c) is a circular disc, three-fourths, one, and one and onefourth inches in diameter, slightly convex on the outside (e) and deeply concave on the inside, the concavity forming a wide groove (d) about the attachment of the cone. In the edge of the disc a narrow groove (f) is cut for the purpose of guiding the point of the knife in the abdominal dissection. A narrow groove (g) is also made on the convex side within oneare six small holes, which perforate the disc and are seen in Fig. 4; but if the disease has extended beyond

intended to receive the sutures that fasten the instrument to the cervix, and which are tied into, and protected by, the groove (h).

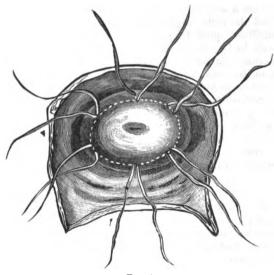
The benefit of such an appliance is at once mani-

manipulated.

The edge of the metal cap serves as director in cutting down from above and defines the borders of the cervix. The concavity of the cap forms a receptacle for iodoform or other antiseptic powder, and with the cone effectually corks up the uterine canal, which is furthermore hermetically and strongly sealed by a line of silk sutures passed around the cervix and through the small holes in the disc.

By preventing the discharge of septic material from the uterus, it admits later the more perfect sterilization of the vagina, which can be maintained.

If, with extensive disease of the cervix, the line of fastening sutures are passed through healthy parts



F1G. 4.

well outside of all diseased tissues, through portions of the vagina if necessary, drawn tight, and tied, the line on dissection will be sharply defined by the metal edge.

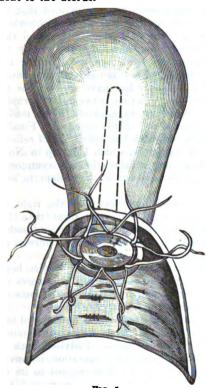
Finally, if necessary, a firm hold is offered to the finger or a metal elevator for raising the uterus from below during the dissection and passage of the ligatures about the vessels and broad ligaments.

I found the application of such an instrument more extensive than at first imagined, since it serves to form the basis of a special technique for removing the cancerous uterus, where from the amount of cervical disease, it would be impossible to operate by the usual

Operation .- The patient, after careful preparation of the bowels, is etherized and placed in the lithotomy position; the vagina thoroughly cleansed with soap and a solution of bichloride of mercury; the os, if necessary, dilated; the uterine canal curetted; and the cervix drawn down with tenaculum forceps as far into the introitus as possible. Six strong silk sutures are now passed so as to completely surround the cervix, and their ends kept long enough to tie easily. If sixteenth of an inch and parallel to the edge of the the cervical tissue is normal, it is better to hold the disc. In this groove, at regular intervals apart, there instrument, and the needle should pass through it, as

the cervix, then it will be necessary to pass the sutures, in part at least, through vaginal tissue.

The uterine canal is again dilated to facilitate the easy entrance of the seal, and douched with antiseptic solution; the seal is then passed wholly in, and if found to fit satisfactorily, is partially withdrawn so as to enable one to bring the sutures through the small holes in the in cases where drainperiphery; the sutures are now drawn through the small holes (sc) by means of a small crochet-hook, such as is used by women, and in the same manner, by passing the hook through the hole, catching the sutures, one at a time, and withdrawing hook and thread. The two ends of the sutures nearest each other are drawn through the same hole. The groove (d) is then filled with iodoform by slightly depressing the cap, and the instrument is pushed as far as it will go into the uterus. The seal in place, with the sutures, is shown in Fig. 5. The sutures are drawn tight and tied in the groove (g), so as to firmly fix the instrument to the uterus.



A continuous line of running suture is now passed, well outside of the edge of the seal, through the walls of the vagina, so as to completely encircle the cervix, and the two ends of the suture left long enough to tie. Care must be taken not to pass the suture too deep in the region of the bladder lest this viscus be injured. The suture in situ is seen in Fig. 6.

An incision through the vault of the vagina, encircling the cervix, between the edge of the seal and line of suture, is made, and the uterus sufficiently freed from its lower attachments, by means of the finger or blunt end of a scalpel, to enable one to close in the vagina below the cap of the seal (see Fig. 6). there is any hemorrhage from the vaginal artery this requires but a single line of continuous suture, which is to be checked. The vagina is now closed, leaving should be taken in the following manner: starting at

string, at the same time pushing up the cervix and tying. This is shown in Fig. 7. The sutures for this purpose are best made of absorbable material, such as catgut or kangaroo tendon. The purse-string suture can be reinforced in some cases by one or more over-

and-over stitches: or age may be considered necessary, a piece of gauze or wicking may be inserted in the wound before the suture is drawn tight. A piece of iodoform gauze is packed in the vagina, and finishes this part of the operation.

The patient is now prepared for an abdominal incision; the cavity of the perito-

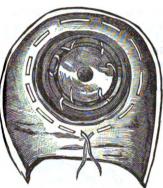


FIG. 6.

neum is opened above in the usual manner; the uterus is seized with strong volsellum forceps and drawn up into the wound; a sound is passed into the bladder and the exact limits of the attachment to the uterus determined; an incision is then made through the peritoneal covering of the anterior portion of the uterus about three-quarters of an inch above the bladder attachment, and the peritoneum with the bladder is dissected away from the uterus well along the sides and beyond the edge of the seal below. A large-sized sponge inserted between the uterus and bladder at this period of the operation will protect the latter organ and ureters. The uterus is now drawn forward and

downward, and an incision made through the peritoneal covering of the posterior surface; the peritoneum is pushed or dissected well away from the uterus and the incision carefully extended into the broad ligaments. A large, flat sponge is inserted behind the uterus, and the bowels kept out of the way. Clamp forceps are then placed on each broad ligament, outside of the ovaries, the points reaching as far as the metal cap over the cervix,



F1G. 7.

and the uterus with the adnexa cut away from its attachments, keeping as close to the sides of the organ as possible. During this procedure, as often as a vessel is cut across it is immediately tied to insure against hemorrhage in case the forceps should slip.

After the uterus is removed and the vessels tied the clamps are taken off and any oozing of blood is stopped by suturing. Then the peritoneal cavity is entirely closed below by sewing the anterior reflection of the peritoneum, which was dissected from the uterus, to the posterior; the stump of the broad ligaments should be closed in at the same time. This the seal in the cavity of the pelvis, by drawing tightly the anterior end of the wound in one of the broad on the ends of the sutures, in the manner of a purse- ligaments, the point of a full-curved Hagerdorn needle is made to enter and come out on the same side of one of the peritoneal folds of the ligament, the needle being carried parallel to, and about a quarter of an inch from the cut edge; it is then passed across to the other fold and entered in the same manner at a point directly opposite the exit of the former stitch; this is continued until the whole line of raw surface from the beginning at one ligament, across the pelvis to the end of the other ligament, is closed in. As the stitches are drawn tight, the cut edges of the peritoneum should be folded in so as to bring the serous surfaces into contact and leave the sutures buried outside of the peritoneal cavity. The manner of inserting the stitches is illustrated in Fig. 8.



F1G. 8.

Any blood present should be wiped out of the body cavity, and the omentum carefully spread over the bowels. The abdominal wound is closed, layer by layer, and the line of incision sealed with collodion. It is better to use animal ligatures in doing the operation.

It will be seen at a glance that by the above method no raw surface is left with which the gut can come in contact, and form subsequent adhesions; that in case drainage is employed, it is in the cavity of the pelvis below the peritoneum; and that with the patient in the Trendelenberg posture, the operation may be finished intelligently, the parts being in full view and easily accessible. The operation is practically bloodless. Its greatest fault, as far as I have been able to determine, consists of the time it requires, but this is partially compensated for by the fact that the time consumed when the peritoneal cavity is open, is less than by the usual method of supra-vaginal hysterectomy, and also by the fact that the operation when completed is more finished than any other hitherto advanced. For the relief of cancer of the cervix it completely does away with the blind surgery of the vaginal method and the concomitant dangers of hemorrhage, injury to bladder and ureter; for the treatment of other affections which require hysterectomy it avoids the dangers of hernia and sepsis peculiar to the extra-peritoneal treatment of the stump; it avoids the danger of infection in the intra-peritoneal treatment, and is attended with a more rapid convalescence; finally, it has all the advantages of the modern method of total extirpation, with the additional one of greater facility, greater perfection, and wider range of usefulness.

An English surgeon says that people who use rocking chairs the most become deaf the soonest.

Clinical Department.

ABLATION OF OVARIES AND TUBES FOR HYSTERO-EPILEPSY, WITH ENTIRE RELIEF FROM SYMPTOMS SINCE OPERATION.

BY JOE V. MEIGS, M.D., LOWELL, MASS.

Miss D., aged eighteen years, born in Vermont, of French Canadian parentage. Family history good. First menstruated at the age of fourteen; was then confined to her bed under the care of a physician, and for three weeks after for an hystero-epileptic condition. Since then, at every period and at times between periods, she has suffered from this same condition. She has been under the care of a number of physicians at different periods of time, and has taken all of the medicines indicated with but little, if any, relief.

In July, 1892, she came under my care, and gave me her history as written above, and added that the attacks now came on regardless of periods, and were increasing in frequency. She complained that she was unable to work (having lost every position she had ever had on account of her infirmity), and that now she could not go about alone, for the reason that she had had fits on the street and was fearful that she might have more. I saw her several times during the attacks, and have seen her have as many as three in one day, and then at a time between her periods. Advised her to allow an examination to be made under ether, but patient and family objected. Finally, after due consideration, with but little hope of relief, I concluded to try medicines, which I did up to November, 1892, without any amelioration of symptoms. this time I gained consent of the patient to an exam-

I found marked tenderness over the right and left ovarian region, more over the right than the left. Vaginal examination under ether disclosed both ovaries slightly enlarged; uterus occupied its normal position, but would not admit sound.

I dilated the uterus and awaited results, hoping for some relief. It did not come. The seizures came on just as frequently as before and with the same severity. Patient began to lose all hope of relief.

Finally, with some hesitation, I suggested to her as a last resort, an abdominal section with removal of both ovaries and both tubes. I advised both her and her parents in regard to the operation, its severity, its effects, and the doubt I had in regard to its effecting a cure; explained everything to them, and concealed nothing. She and her family gave immediate consent. Not being quite satisfied as to the advisability of such severe means, I consulted my medical friends and what literature I could find on the subject. My friends, with one or two exceptions, rather advised against operating. The literature at my command gave me but little encouragement.

Finally, at urgent request of patient and her family. I operated at St. John's Hospital, Saturday morning, February 25, 1893, assisted by Drs. Irish, Bradt and Harrington. Ether was administered, abdomen opened in usual manner, patient placed in Trendelenberg posture, and ovaries and tubes brought into view.

The right ovary was enlarged, and showed appearances usually indicative of csytic degeneration. The left ovary was slightly enlarged. I concluded to remove both; which I did in the usual manner, ligating close to the uterus on either side, silk being used.

There being no hemorrhage, the cavity was not ushed out. The abdominal walls were brought together, silkworm gut being used. Patient made an uninterrupted recovery, and was discharged in three weeks. Up to the present writing, October 1, 1894, my patient has had no attacks. She insists that she is perfectly well; is able to work every day; and has nothing left of her former trouble excepting the memory of it. As to whether she will ever have a return of the trouble, I am, of course, unable to say; but from her appearance and condition at the present time, I should think not.

Whether castration is advisable in cases of hysteroepilepsy will remain a question; yet in my case, where upon palpation and by vaginal examination the ovaries were found to be tender and enlarged, it would seem as though I were justified in making a section, and after bringing the organs into view and noting that they were diseased, I believe I did my duty in remov-In any event, by these means I have relieved my patient of the terrible burden she has borne, and her parents of their great and constant care.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVE-MENT.

JOHN T. BOWEN, M.D., SECRETARY.

REGULAR Meeting Monday, May 14, 1894, the President, Dr. C. F. Folsom, in the chair.

Dr. W. M. CONANT read a paper on

COLLEGE ATHLETICS.1

Dr. H. P. WALCOTT: It is a very great pleasure to me that Dr. Conant has treated this subject in a somewhat wider fashion than the programme for the evening promised. He has shown in his very distinct statement of the value of exercise the importance of its early beginning. I do not believe that college athletics distinctly as college athletics are a matter of any great importance. It does seem to me a matter of immense importance that the young boy should be properly educated in the use of his body, either by the natural instincts that lead a boy to play with his associates, or, if that does not happen to be stimulus enough, by some carefully devised gymnastic exercises. By the time he gets to college, Cambridge at any rate, he is between eighteen and nineteen, and whatever he is going to be physically, has been pretty well settled at that time. The real function of the university or college in then dealing with him is to offer him that amount of professional assistance and guidance, that shall enable him to correct defects in his previous training, and repair omissions that have been made in his life up to that time.

It is not necessary to describe the various means employed at Harvard for supplying this assistance. The Hemenway Gymnasium and its accomplished director with well-trained assistants can afford and do actually place within reach of every student all necessary information as to bodily condition, and the use of appropriate gymnastic apparatus. I cannot think that the governing boards of any college would have been

¹ See page 381 of the Journal.

contests now carried on between the respective institutions as a desirable addition to the years of life there. So long as these contests consisted in an annual meeting of two great rival colleges, the interruption of the proper work of the university was not very great, and any needed stimulus to the outdoor sports was given; but the temptation to increase the number of these events has been apparently irresistible, and the time cannot be far distant when another serious attempt will be made to prevent the useless waste of both time and money incident to her present conduct of athletics. The real interest, it seems to me, of the college authorities is not in the production of a team of nine men or eleven men, or crew of eight men, but rather in that body of many hundred men indulging through a certain number of hours of the day in a reasonable, attractive exercise in the open air, such an exercise as lawn tennis, for instance.

Fortunately Cambridge will soon be in condition to offer the most spacious athletic grounds in this country to the students of the university - the Soldier's Field and the Longfellow Meadows will soon be in condition for general use; a portion of the territory, of many acres in extent, is already prepared, and all students who have any inclination to bodily exercise will there find abundant room for its practice.

Mr. G. W. Weld has made it possible to revive boating upon a much larger scale of usefulness than has been possible for many years, by his generous gift of a fully equipped boathouse; and, whenever this community insists, as I confidently believe it soon will insist, upon having a clean and attractive stream of water between well-kept shores, in place of the present tidal estuary with filthy banks; then I believe that the Charles will present in the pleasant months of the year, the same attractive pictures of active life that are seen in some of the more fortunate university towns on the other side of the ocean.

PRES. F. A. WALKER: I speak as a layman. I suppose the question is not as to the value of exercise which all admit, but of the maintenance, perhaps extension, of those college sports which have been made so well known to us during the past few years — college athletics. They may be considered in a great variety of relations. It does not seem worth while to spend much time in replying to the objections which have been made often so intemperately and abusively in the public press in regard to the abuses of college athletics, especially football. Those abuses are incident to the early stages of any system, and will, I have no reason to doubt, correct themselves by general consent of those who take part in them, either college authorities or the young men themselves; and it is better that they should be corrected by the young men themselves than a little later by the intervention of college authorities. We have in this evening's paper a good example of the way in which that thing works — the announcement of the abolition by general consent of the mile-walk, which has been a very unpleasant feature of field athletics.

But there are four relations of college athletics which it may be worth while to consider a moment: first, as to the health of the athletes themselves; second, as to the character and mental development of the athletes themselves; third, as to the promotion of gymnastics throughout the college body outside the at all likely to select any one of the intercollegiate body of contesting athletes; and, fourth, to the promotion of gymnastics and physical development of the general community of all classes high and low, those who are younger than college men and those who do not go to college.

In regard to the relation of college athletics to the health of college athletes themselves, I cannot speak with authority; but I entertain a strong conviction that any athlete who takes part in competitive sports takes more exercise than is necessary for keeping him in good health, and perhaps more severe than would be desirable. That excess is not necessarily injurious. It means that the nervous force spent in that way cannot be spent in study. Some men sometimes suffer severe injuries in rowing, if not properly supervised, from heart trouble; sometimes severe injuries, though less frequently than is represented, in football; and a man cannot do anything in this world in which he may not be killed. Of course, all these injuries are charged against athletic sports by hostile critics in a very unfair way. While there is some liability of real injury from excess of athletic exercise, the greater part of the excess of all exercises is to the disparagement of scholarship. The young man who comes home from football in the afternoon with head swimming, tired, worn out, is not fit to study very much that evening. I think a great deal depends on the good sense of college bodies. In the institutions in which I have been more particularly interested, I think there has been a fair degree of success in reconciling at least a good college standing with athletic superiority. It is quite remarkable to give the names of men in successive classes. I think it is rather remarkable that that reconcilement has been carried so far as it has. We must admit, I think, on the whole, that scholarship must suffer somewhat at the hands of athletics so far as the athletics themselves are concerned, though, as I said, it is not necessarily so much as is often represented.

As regards the relation of college athletics to the character and general mental development of the athletes, I am disposed to take almost a wholly favorable view. Our modern life demands pluck and nerve and a spirit of self-sacrifice and ability to work together, so that I confess it seems to me an excellent thing that something like what our athletes are called upon to do in these preparations for contests should be had. It is a splendid development of will-power and mental force which brings the greatest fruits upon the fields in which these contests are fought. I confess to a great satisfaction in the development of the character of the young athletes whom I personally know, who of this subject which I venture to indicate. have been engaged in these contests representing their themselves the ordinary pleasures of college life for a long term for the sake of an object to which they are devoted. I do not think it is a bad thing to have examples of that: I think it is a good thing. I have a great respect for most of the athletes in the country. I do not think they could have done what they did had they not had a good deal of manliness, spirit and level-headedness. Even if they sacrifice their scholarship in some degree — speaking of the ordinary American college life — I should as soon my son would be a first-class athlete as a third-class scholar. When one considers what is meant by being a firstclass football player, what quality he has to exhibit, it seems to me it is something to be bought at a fair price.

promotion of gymnastics in the student body. It is easy to say that of the one thousand students in the university all of them ought to go to the gymnasium and put on their suits. But we know young men require something to stimulate, excite; require examples, something more than the knowledge that such and such a course would be best for them; and I do not think it is possible to doubt that college athletics have a very decided influence in promoting gymnastics throughout the college. I graduated in the old days before there was any college gymnasium, and I remember how little there was of exercise, how badly our men were built up, how much they suffered from want of exercise; and it seems to me a great thing that the body of college men should be encouraged and stimulated to gymnastic training, putting themselves in first-class physical condition as far as possible. It seems to me college athletics make an important contribution to that thing. They furnish the types of splendid physical men, teach the ordinary student to respect men who are well-developed and have a splendid physique, and they have an influence in promoting gymnastics among the body of college men outside the body of representative athletes. It seems to me that it is a result that might be purchased at a considerable price even at a sacrifice on the part of the contesting athletes themselves. I think they are rather the better than the worse for their participation in these games.

Fourth, you have the relation of the college athletics to the promotion of athletics in the general community; and it seems to me that is very important. The colleges of the country have aroused an immense interest. I think we should doubt that it could be aroused to such a degree throughout the whole country. I have been impressed by the developments in what is called interscholastic athletics in the last few years. colleges, high schools and academies have done much in track athletics, etc., showing that the young fellows are beginning to have some ambition in regard to physical development and physical practice; and I think it is a great thing. The physical basis of life has been too long neglected or not appreciated. It seems to me important that these young fellows and the academies and high schools should have ambition to be well set up, strong, plucky, and to show quality. do not believe the value of that can be overestimated; and I think the development of athletics in academies, etc., shows that this thing has come to stay. To my mind this is the most important of the four relations

MAYOR BANCROFT, of Cambridge: I am not only colleges and going through hardship and denying a layman, but I come without the experience of the distinguished gentleman who has just talked to us; yet a few observations have occurred to me as I have listened to Dr. Conant's valuable paper and to the remarks that have been made. It is curious, to begin with, that physical culture is the only branch of education for which it has been deemed necessary that there should be an emulative stimulus. It has never been deemed necessary, so far as I know, that there should be any emulative stimulus for intellectual culture or for social culture. It may be said that intellectual culture is distinctly the function of a university. The physical, moral, religious, social branches of culture are, it is said, its charge; and yet we are constantly told that physical culture is an important branch of education. It is conceded to be; every body admits More important is the relation of athletics to the it; that is not worth discussing. If it is important,

unless it is placed - and perhaps you will say that is the reason — on the same category as social culture and other culture aside from intellectual, why should it be necessary that there should be a stimulus? If it is important to the extent that has been represented, why should not the authorities supervise? Why should it not be directed scientifically? Why should there not be instruction? In those institutions of the technical sort maintained for the government service physical culture is systematically taught, advantageously taught; but in the ordinary institution of learning it is left to itself for the students to develop as best they may with some restrictions. I simply speak of this as a curious fact. I do not undertake to discuss the reasons; it must be accepted as a fact.

I am somewhat in the condition of the member of parliament who said ditto to Mr. Burke, after hearing what General Walker has to say about the four relations of physical culture to college students. I agree entirely that it is to the disparagement of scholarship that men engage in athletic contests, a very serious disparagement of scholarship; and I want to make just one observation upon that, and that is, is it not a pretty dangerous thing for the college student who is to depend upon his scholarship in after-life to receive that disparagement? I have in mind specifically the members of what are termed the learned professions, men who, if they are not to earn their living, are to support the standing of those professions - medicine, law, theology, teaching. Is it not dangerous for men who are to enter those professions to undertake college athletics if there is disparagement? I make no question about men who are to engage in the business pursuits, to whom it makes but very little difference, some tell us, whether their scholarship be better or worse; but professional men, should they engage in intercollegiate athletics? It seems to me the last speaker is entirely sound, if I may again say ditto, in his estimate of the value of intercollegiate athletics and the example of those who engage in them upon the balance of the students. It is valuable as an incentive. It having been conceded that there must be a stimulus of some sort, their chief value lies in that If there is to be a universal exercise, I think it can be direction — to bring others out; but their value is of readily seen that you can pick upon no one exercise the same sort as is the value of the distinguished actor, singer, distinguished chess-player, if you please, in the necessary, therefore, that a variety of exercises should community at large. The value is not to the individual but to the community; and in these cases the effect upon the community is fully as strong as he estimated. But the main thing in all this discussion, for I cannot lose sight of the fact that it is a branch of education, is in some way to induce every individual - not the four hundred alone at Harvard, but the three thousand to take some part in athletic exercises, and the part that will fit men who do not conceive that it is their purpose to be shining lights to illumine the pathway of others, but men who want to get the advantage out of athletics that there is for every individual. That is the important thing. There is an advantage in athletics for the man who is to uphold the eminent standard of the professions; and it is that advantage, it seems to me, which it is the business of educators to impress upon those who come under their charge. True, it is not important, these matters of football roughnesses. Occasionally heart disease may be developed in an oarsman; but after fifteen or twenty years' experience I sonality of the man. In one crew in which I rowed, have seen very few cases of that sort. Those are not the stroke-oar was a man who took in Cambridge the

university baseball teams, if you please, will regulate itself. Those matters are to be determined, not by college faculties, but by the public sentiment. They will, I believe, regulate themselves; but the important thing, it seems to me, for college men to dwell upon is that the thousands who now, many of them, have no part in athletics except to applaud shining lights, have some regular and systematic exercises they can take to themselves and derive the benefit that is to be derived from physical culture; and that does not mean simply the building up of the muscular fibres, but a great deal more, the formation of habit. It means the appreciation of suitable food, of suitable sleep; and it means that for every student and for every individual: and the importance of this not alone to college students, the importance of this indeed to the community. because I take it the ultimate result of all this physical culture is to increase the efficiency of the race; and it is the duty of every member of the race, particularly the race in this country, to lose sight of no one thing which will assist it to be more efficient.

Dr. W. A. Brooks: I speak as a graduate. It is only seven years since I left Harvard, and I do not claim to have the judgment which older men have in looking at these things. But I believe firmly in intercollegiate athletics; it is therefore needless to say that I believe in college athletics. I recognize that connected with athletics and associated with the different contests there are many evils; but I am inclined to think - in fact, I believe - that these evils can be fully done away with if only those who have the authority are willing to give to them the necessary time and attention. College athletics have for many years shouldered the responsibility for many different kinds of amusement indulged in by college men in general. I do not think it is right that any crew, eleven or nine, should be held responsible for the acts of the student That I think is a matter of departbody as a whole. ment, and should come under the head of college discipline.

What one college man enjoys, another does not. What is exercise for one man is a strain for another. which would be suited to every man. It becomes be given; and, as Dr. Conaut clearly showed in his paper, to one man must be given one exercise, to another another. It is not possible for you to exercise a truck-horse in a sulky nor a trotter hauling stone, and the different physiques of the college men admit just that difference. A man with a heavy frame is not fitted to take light, quick exercises: he requires a differ-

But even if you furnish a variety of sports for men to go into, you have still got to furnish an incentive. Individuals, as I said, differ. You cannot influence some men to come out and take exercise unless you drive them, and then it does them practically very little good. But others you can induce to come out. man who exercises to keep himself in condition is a rare man to find in college, or was in my day.

It has been said that college athletics are detrimental to scholarship. I should like to take an exception to that. I think the scholarship depends upon the personality of the man. In one crew in which I rowed, the important things. The unusual time spent in the highest honors in chemistry for four years. What he

would have done if he had not rowed I do not know. There were others in that crew who did not take honors, but how low a standard they would have reached if they had not rowed I cannot tell you.

There are about every college many temptations. It is not right to say that every man there indulges in It is proper to say that certain men who would naturally be inclined to indulge in them are kept from them by training for some athletic contest. I know of no other incentive that will make a man for seven months out of eight go to bed at 10.30 and get up at 7 o'clock. The college furnishes many inducements to go the other way. There are clubs, and society buildings where conviviality reigns, where men waste more time than ever men wasted who went into athletics, and yet in the hue-and-cry about the time that is devoted to training for one of our teams we hear nothing about the amount of time that is wasted in social enjoyment. If we were to pick out the greatest evil in any college or university I do not think we would first pick out athletics; I think we would look a little deeper, or rather more superficially. I do not criticise the excesses of college life, but I do criticise the hue-and-cry about athletics when such things are allowed to be passed over.

Are the different intercollegiate contests of any benefit to the college as a whole? We often hear that it is only for the benefit of the few that the intercollegiate contests are gotten up. It must be a benefit to the men who go out every afternoon to watch the teams practise. It gives them a change, and though they are not indulging in the sports, they get a little fresh sir.

I said that I thought that athletics had not been properly controlled. I do not think that it is sufficient for a governing board to simply acquiesce in athletic sports and bide their time until by some foolish steps the students or the team have disgraced the university from which they came. I think they are responsible in a great measure for the excesses which follow an athletic contest, responsible not positively, but negatively; responsible because they refuse to punish excesses except by prohibiting athletics. I think if the student body was made once to fully realize that if they indulged in those things the blame would fall upon them and not on athletics, you would soon see a different state of affairs; and this brings me to the danger to the individual in going into athletics. I do not think he is as liable to injure himself by his training, or by the race or by the game which he plays, as much as he is liable to injure himself by the excesses which follow. The sudden going out of training has injured more men than all the training in which they have indulged. In the ten years which I have followed athletics I have noted a gradual change for the better both in the spirit in which the men play and the care with which they train.

DR. M. H. RICHARDSON: I would refer briefly to the medical aspects of athletics. I have always been very much interested in the subject, from the point of view not only of the student and of the athlete, but from the standpoint of the practitioner. I have no doubt whatever that the systematic practice of athletic sports and games, as they have been developed in this community, is of very great advantage, not only to the order to reduce to a minimum the dangers incident to colleges, but to the community at large. When I was all exertion. ollege, more than twenty years ago, athletics con-

in a very desultory visit to the old gymnasium, physical exercise. I believe that the discouragement

in baseball, and in rowing. There was nothing else in athletics. There was neither football, tennis, bicyling, lacrosse, nor track athletics. To-day we have not only the great inducements of intercollegiate contests to stimulate a very large number to active participation in all sports, but games which in themselves are very attractive, like tennis and like bicycling, and which furnish men with agreeable and useful exercise. Though in football and in rowing no great number of men participate, yet into other lighter and, on the whole, more useful sports every college man can enter and derive great physical benefit. In the exercise of these milder games there is an opportunity for high physical development; while in the more violent contests, like football and rowing, the men are benefited in other ways than in the cultivation of their muscles. I would not venture to say much after the eloquent words we have just heard, but I cannot fail to express my belief that there is a stimulation and an education in all the manly virtues when young men contest in friendly and honorable rivalry games that demand long-continued preparation, sustained effort, perfect self-control, and severe discipline.

I wish to say a word about the physical aspects of the games, the injuries to the players themselves by direct violence and the alleged far-reaching ill effects of training. It is on this branch of the subject that medical men are especially fitted to speak. Much has been said by laymen against athletics on account of a few injuries. I have seen in the last ten years several serious accidents from athletic sports, three of which were fatal and one extremely dangerous. Two of the deaths occurred in sparring, one in fencing — contests seldom regarded as dangerous. These comprise all the fatal accidents from this source that have happened in the last twenty years in this community. Occasionally one meets with dislocations, fractures, while minor injuries are not uncommon. Yet, on the whole, the sum of these misfortunes is trivial. The remote bad effects of athletics, even the more violent, I have never seen personally, though I dare say that there is an occasional instance in which permanent harm has been done either by direct violence or by indirect training. Under the present excellent system of selection and medical supervision I believe the latter source of ill health has been reduced to a minimum. It therefore hardly need be said that there is no good reason for discontinuing sports in which so many hundreds and thousands of men indulge with safety. The really dangerous games may be trusted to regulate themselves. Just as soon as it is known that a certain method of play causes unnecessary hazard, that play will be changed. In spite of every precaution, however, there will be violence, injury and death in all active physical exercise on land or water. A weak blood-vessel in the brain will give way under a blow, or even under excitement alone; a foil will penetrate the mask; a man will fall in that peculiar way necessary once in a million times to cause death; he will drown, bleed to death, break his neck; in a word, once in a very long time a man will be killed or seriously injured in spite of every precaution. It does not follow that all these sports should therefore be given up, but rather that all games shall be guarded by reasonable regulations in

Great good has been done by the encouragement of

of athletics in universities and colleges will be followed by deplorable results to the general physique of the student. What we need most is to cultivate these exercises which are agreeable and at the same time are healthful to the large body of students.

The object of athletics is primarily to cultivate the habit of systematic exercise. This habit, of the greatest importance to health, should not be a perfunctory one; it should be one anticipated and practised with pleasure. Exercise taken reluctantly and without pleasure fails in part to give the mental stimulation which exercise healthfully enjoyed cannot fail to impart.

To promote this primary object in athletics anything should be encouraged which adds to the general interest in the subject. Hence the value of contests, like football and rowing, in which the issue is watched by the whole country. Such contests stimulate an active interest in physical exercise in all classes of life, and help to make us what we have never been, and what it is extremely desirable that we should be, a nation of

men of good physical development.

Dr. J. Homans, 2nd: I have been extremely interested in this discussion; and it seems to me there has been a general concensus of opinion that athletic sports tend to do men good in almost every way. I understood the reader to say we train here more severely than in England - for a longer space of time before the contest, and with more exact rules as regards diet and habits. Now we live in a climate tending more to the production of nervous diseases and general nervous disturbances, and therefore a climate much harder on men undergoing severe training. I think I have seen quite a number of men whose health has been affected, possibly not permanently, but certainly for some time by the severity of the training they have been through, the results being evident for a year or so; and I have in mind one or two cases that, in my opinion, have not recovered after ten or twelve years. I should like to ask Dr. Conant how many men he sees on the team that require the use of drugs to enable them to sleep while training, and how many times he has been obliged to lay the men off the team because the training was too severe. I have heard statements made quite a number of times that men had had to use sulphonal and various hypnotics to stand the training.

DR. C. J. BLAKE: The question discussed this evening has been that of athletics as affecting the undergraduate, that of the effect upon the graduate has not been touched upon. Mr. Thomas Hughes has expressed himself decidedly in this matter; and in a conversation five years ago I was much interested to find him still holding the same views in regard to the value of athletics in schools and colleges to the man doing

intellectual work in later life.

The college student at the end of four years' study and exercise, goes out into the world, and becomes some kind of a specialist according to the course which circumstances make necessary or his inclinations and possibilities make best; and I believe that a review of the men now doing good work in business and in the professions who have followed some form of athletic exercise in a moderate degree while in college, will show that the influence of college athletics upon the staying and working power of these men in middle life has been for good, and for these reasons:

It has, in addition to its animal value, helped them to appreciate the worth of that spirit of emulation some fitting schools, many of the menced. I have seen mo in college than by any of the mental side of this question.

University of Viena students in the Medical life has been for good, and for these men in college than by any of the mental side of this question.

spoken of this evening, helped them to study and to appreciate the machine in which they live and with which they have to do their work, and helped them to encourage in themselves a habit of self-control which stands them in good stead in later days; and it seems to me, therefore, if it is the province of the college to fit the student for the life he is to live in the world — a useful life—if organized college athletic work is a help in that direction, that such work should be made in some way a part of the curriculum. Hence it should be the duty of the college to see that the undergraduates are encouraged to athletic exercise under proper control.

DR. CONANT: I am very glad indeed to hear Dr. Blake's remarks; coming from him they carry with them additional weight. I have in my paper touched upon this point; but as the time was limited I have preferred to confine myself to one point, namely, that the development we give our children, our boys, our young men, in the form of an athletic education, stands by them long after they have become men. questions have been asked me: one was, whether I was in the habit of laying off any of the men from the team; and the other was in regard to the giving of drugs. My connection up to this year has been practically only with the crew and with the football men. Mr. Lathrop has had entire charge of the track athletic There has not been a season in which it has not been necessary to lay off every single man one or more times on both the crew and football teams; due sometimes to slight bruises, and sometimes to the fact that I thought the men needed a rest, although there was very little actually the matter. Whenever drugs have been given, there has been the same discretion used with regard to the team as in my own practice. The same discretion has been used in regard to the athletic teams as is used in regard to other men who have come to me, not members of the team. The only drugs given for sleeplessness or pain have been sulphonal and phenacetine; and they have not been given, to my knowledge, in larger than five-grain What drugs a man doses, and very rarely repeated. may have taken on his own account, and without authority, I am unable to state.

I do not agree with Dr. Walcott that the men who go to college at seventeen or eighteen years of age have finished their physical training. At that age they have only just begun it. If he will consult some of Dr. Sargent's records, he will see that there has been a steady building-up of hundreds of men, so that oftentimes a delicate man has been turned out a robust, strong and healthy athlete. I wish to convey the impression that the average man on entering college is nothing but a child as regards athletic work, and that it is for the college to take up and carry on what the fitting schools, many of them, have so admirably commenced. I have seen more men injured by overwork in college than by any athletic contests and sports. We must recognize not only the physical side but also the mental side of this question.

University of Vienna. — The total number of students in the Medical Faculty of the University of Vienna during the last summer semester was 2,427. Of the foreign students 77 came from the United States, 104 from Russia, 48 from Roumania, 29 from Servia, 27 from Bulgaria.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

C. L. SCUDDER, M.D., SECRETARY.

REGULAR Meeting, Wednesday, January 3, 1894; Dr. Abner Post in the chair.

Dr. H. L. SMITH reported upon

AN EXPERIMENTAL STUDY OF THE REDUCTION OF ELBOW FRACTURES.¹

DR. BLAKE: I was very much interested in the paper and in the experiments made. The results seem to bear out the views of the reader as to the value of this method of treatment. I have seen a good many of these fractures at odd times, and my plan has been, remembering the teaching of Dr. Bigelow, that all injuries about the elbow-joint except fractures of the olecranon should be treated with the internal angular splint. Under that method, if carefully applied and with sufficient knowledge on the part of the physician as to the treatment of fractures, the results are reasonably good. I think in most cases of fracture about the elbow-joint, the patient should be etherized in order to get an accurate idea of the kind and extent of the fracture so as to be able to get the parts into proper apposition by relaxing the muscular tension and then putting them upon the splint. think, in the fractures of children, a great mistake is made by leaving the splint on too long. We know how rapidly the processes of repair go on in the healthy young. After ten to fourteen days, passive motion should be begun. Following this plan, I think you get pretty good results in the average case. Ordinarily I think the results are good if the aftertreatment is persevered in sufficiently long. It is a very difficult matter to carry out this part of the treatment in children. The child shrinks from extending a somewhat painful joint, and it requires a good deal of courage and perseverance on the part of the attendant to insist on required continuance of treatment. Looking back over a long period of years, I can recall cases where even when the result immediately following was not very favorable, yet time and use worked wonders in restoring motion. This method of Dr. Smith's, making acute flexion, I have had no experience in. Anything that will lessen the duration and improve the result is to be welcomed. Theoretically, I should think that keeping the arm in that position would tend to shorten the ligaments and make it difficult to get complete extension. Whether that is so in practice I do not know. I do not understand he made any comment on the old-time treatment of fracture of the olecranon. I cannot help commending the pains and care and skill with which these investigations have been carried on, and we shall all be glad if the results are an improvement on the old method.

Dr. C. L. Scudder: In the treatment of fractures of the elbow I think that it is common experience to find that if there is a loss of motion, it is generally in flexion; that the amount of extension is little impaired. If by this method of treatment, semi-pronation and extreme flexion, greater motion at the elbow-joint is to be obtained it is a distinct step in advance. Experimental work of the sort which Dr. Smith has reported to-night is of very great value, both scientifically and practically.

1 See page 386 of the Journal.

Dr. Post: I remember very well indeed the teaching of Dr. Bigelow that Dr. Blake refers to. He made everything beautifully simple, and his teachings were a distinct advance upon the teachings that had gone before. I do not think his teaching was fully accepted outside of his own scholars, and I think we have all of us found difficulties in reaching results that were perfectly satisfactory. It is as a sort of protest against the unsatisfactory results that have occurred in treatment in the right-angled position that has led to a sort of revolt and the desire to find perfection in the fully extended position. While I have felt that unfortunate results must occur in the flexed position, I have felt in my own mind a peculiar antipathy to the extended position which grows from an experience I had as a very small boy. Among my schoolmates were two boys; one had had an amputation of the arm through the humerus, the other a fracture of the elbow-joint treated in the straight position. The young man who had amputation of course lost entirely the use of his arm; but the young man who had the arm treated in this way had an anchylosed elbow, and was an object of pity to us all. He could not play ball, could not wrestle, could not feed himself with that arm. I used to hear the same remarks from that young man about the carelessness of the doctor that are so familiar nowadays, and that we hear occasionally when something uncomfortable results from treatment in the ordinary flexed posi-I never see a poor result from the flexed position that I do not remember that boy, and think that no matter how bad the result is here, whether there is anchylosis or limit of motion, that that patient with the poor results from the fracture treated at an angle is better off than my old friend whose arm was anchylosed in the extended position. I have been extremely interested in Dr. Smith's experiments. I have seen one or two cases that have been treated in It is pretty easy to get the fully flexed position. them in the flexed position with plaster-of-Paris; that really makes very pretty splints. I have not been able to follow the cases so that I know the final results, but it was striking to see how well they kept in position when the cases were first put up. One case I remember particularly, with fracture of the lower end of the humerus. That was a very trying case. I am sure that in that case I got into the extra flexion by working over the case with the child under ether, because I found that was the only position that would hold the child. I know there was a very good result in that case. I think we shall hear more from Dr. Smith's position in the future, that it promises to be the position for the majority, perhaps, of fractures about the elbow-joint, the olecranon being relegated to the straight position.

CREMATION IN ENGLAND. — Cremation is steadily rising in public estimation in England. Among the persons of note who have been cremated during the last few years are: George Hawkins, one of the founders of the Society; John Henry Wellington Graham Loftus, fourth Marquis of Ely; James Nasmyth; Sir John Walter Huddleston; Francis Charles Hastings, eighth Duke of Bedford; Madame Helen Blavatsky; F. S. Leighton; Lady Bramwell; Lord Bramwell; Earl of Northesk; Lord Calthorpe; Lady Catherine Northcote; Sir Henry A. Clavering, Bart.; Dowager Duchess of St. Albans.

THE BOSTON

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THE SURGERY AND PHYSIOLOGY OF THE

OPERATIONS for the removal of the spleen, though common enough in animals, which often survive the operation, have but recently been performed in the human subject. One of the earliest successful cases was that of Spencer Wells, in 1866. The spleen was extirpated for malarial enlargement, and a year afterward the blood was normal as to the proportion of red and white corpuscles.

SPLEEN.

Tricomi, of Padua, subsequently reported three splenectomies, two of which were successful; the patient operated on by Raggi, of Boulogne, who had a malarial spleen, those also of Montenovesi and Bacon Saunders (the latter of Texas) also made a good recovery.

In a recent number of the Zeitsch. f. Hug. u. Infectious Kr., O. Vulpius publishes an article (reproduced in the Semaine Médicale) entitled, "A Contribution to the Surgery and Physiology of the Spleen," in which he reports five splenectomies performed at Czerny's clinics. Of these five patients two succumbed, during the operation, from hemorrhage, as is an almost inevitable result in large leukemic spleens; Czerny now refuses to operate on such spleens. Two of the other patients had hypertrophy from unknown causes; the enormous size of the organ and the existence of grave general disorders had furnished the indication for the operation. These patients made a good recovery. The fifth case was one in which severe contusion of the spleen was followed by perisplenitis with adhesions; partial mortification of the spleen ensued with formation of perispleuic abscess, which subsequently became putrid by invasion of the bacteria of the intestine. This patient also got well.

None of these three patients presented any grave symptom attributable to the functional suppression of the spleen. In two of them, the operation was immediately succeeded by a leukemic condition, which only disappeared at the end of four or five months. In the red corpuscles. Per contra, microscopical researches other patient, the ablation of the spleen was followed have not yet demonstrated the formation of red cora-

by an augmentation of volume of a great number of the lymphatic glands.

Although splenectomy is a modern operation — so modern that Wyeth in his "Text-Book" (1887) says that "it has been performed in several instances on account of the enlargement of the organ in leucocythemia, but without the success which would encourage a repetition of the operation," — yet Vulpius has been able to collect details of 117 operations.

A first group contains 28 operations for leukemic spleen. Only one made a permanent recovery; at the end of three months the blood had become normal again. Two other patients succumbed, the one at the end of thirteen days, the other at the end of eight months, to a state of grave leukemia with progressive enfeeblement. The other 25 patients succumbed rapidly to the consequence of the operation; 20 died of hemorrhage in less than two hours. From these experiences, the author draws the conclusion that the operation is unjustifiable when with increase of size of the spleen there is a high degree of leukemia; the extreme limit of intervention being one leucocyte to fifty red corpuscies.

In a second group, Vulpius includes the spleens of malaria, the so-called idiopathic hypertrophies and lastly, the mobile spleens. Of these, there were 66 cases with 24 deaths, a mortality of 36.36 per cent. The highest mortality is furnished by malarial spleens, the ablation of which is no longer to be advised. In 23 cases, splenectomy was performed for divers causes: simple cysts, echinococci, sarcomata, abscess, amyloid spleen, etc.

In the totality of the 117 cases, there were 58 deaths (a mortality of nearly 50 per cent.); but if abstraction be made of the cases in which splenectomy ought henceforth to be considered as contraindicated (leukemia, amyloid spleen, hypertrophy by venous stasis) there remain 85 cases with 29 deaths in consequence of the operation (about 38 per cent).

The phenomena which ensue on ablation of the diseased spleen in man have not yet been sufficiently studied. In a small number of cases, there was hypertrophy of the lymphatic glands; in a few others, goitre supervened, accompanied in one of them with the symptoms of Basedow's disease. The phenomenon most frequently observed was an augmentation, more or less rapid, of leucocytes. Future researches must determine if this numerical increase of leucocytes (which in some cases was only temporary) is a regular consequence of the operation, or if it is only produced in certain conditions.

In a second part of his article, Vulpius sets forth the various opinions of physiologists on the rôle of the spleen in hematopoiesis. Microscopical anatomy tends to show the possibility of a penetration into the blood stream of colorless corpuscles coming from the spleen; and, on the other hand, it seems to be proved to a certain extent that this organ is the seat of a destruction of puscles. Investigations in the direction of comparing the blood of the splenic vein with that of the artery have not yet given any definite result. It seems, according to the author, to be fairly well established by experimental facts that an abundant loss of blood acts on the spleen as a functional excitant of hematopoiesis.

The results obtained by extirpation of the spleen in healthy animals are of great importance, and from the facts thus far observed we are warranted in concluding that the ablation of that organ is followed by a diminution of the number of red globules and a numerical augmentation of the white.

The subject of accessory spleens possesses some interest. The frequency of these accessory spleens is variable; they are met oftener in Northern than Southern Europe. The existence or absence of these accessory glands may explain in a certain measure the differences observed as far as regards the alteration of the blood after splenectomy in man. Moreover, experiments on animals go to show that a functional suppliance may be exercised from the point of view of hematopoiesis by the lymphatic glands and the marrow of bones.

If the formation of blood really takes place in part in the spleen, we are warranted in supposing that the ablation of this organ must have consequences especially marked in cases where the organism has previously suffered a considerable loss of blood. In fact, experiments seem to show that the regeneration of the blood after hemorrhages is somewhat retarded in animals deprived of their spleen. On the other hand, Vulpius has not observed that the consequences of splenectomy were more grave in animals previously bled than in those which had not been subjected to such depletion before the operation.

We may supplement what has been said above by reference to Banti's monograph on "Splenic Anemia." Banti urged the value of splenectomy in this disease, in order to anticipate the subsequent development of anemia and exhaustion. At the Middlesex Hospital, England, Mr. Pearce Gould recently performed the operation in a case presumably of the kind described by Banti. There was marked splenic enlargement, a light degree of anemia, but no leucocytosis. Splenectomy was performed April 14th by Mr. Gould, who made a long incision in the left linea semilunaris; the pedicle was tied with silk in seven ligatures. The spleen was simply hypertrophied; it had caused great weight and fulness and discomfort. Convalescence was rapid, and was attended by marked increase in the hemoglobin and red corpuscles.

On April 25th Dr. James Murphy also performed a successful splenectomy at Sunderland Infirmary.¹

In the Lancet for September 15, 1894, is an interesting communication by Dr. Edward Milins, entitled, "Rotation of the Spleen; Removal; Recovery." The patient, a small, spare woman thirty years of age, had suffered from severe abdominal pains, vomiting and prostration; a movable swelling on the left side oc-

cupied the lower part of the abdomen and seemed to be the cause of the suffering. A laparotomy was made January 2, 1894, and the tumor was found to be an enlarged rotatory spleen. The pedicle was tied off with silk ligatures and the spleen cut away. The abdominal wound was closed with silk sutures. The patient made a good recovery. There has thus far been a great numerical increase in the number of leucocytes, with a marked reduction in the number of red corpuscles.

SPECIAL HOSPITALS FOR CONSUMPTIVES.

KOOH'S discovery of the bacillus tuberculosis has caused increasing attention to be given from year to year by the medical profession to the problem of the prevention of tuberculosis. The subject is now almost constantly under discussion. Last winter the College of Physicians, of Philadelphia, considered it; this spring the Massachusetts Veterinary Association took it up; and lately it was the chief topic at the annual meeting of the New York State Medical Association. During this last discussion, the value and importance of special hospitals for consumptives was strongly urged. In England they certainly have been found serviceable.

Such a special hospital and dispensary for the care and treatment of cases of pulmonary tuberculosis has just been opened in New York. In April last, as mentioned in the JOURNAL at the time, a meeting of ladies was held for the purpose of establishing this institution. As a result, the house No. 230 West 38th Street was secured; and after it had been suitably fitted up for the purposes designed, it was opened informally to the public about the middle of June. No patients were received, however, until the 1st of October, and the first regular business meeting of the Board of Managers was held October 11th, when it was decided that the institution should be known as "The Consumptive's Home." Dr. Charles E. Quimby, the associate of Dr. A. L. Loomis, is the physician in charge, and the principal feature of the treatment employed will be the pneumatic cabinet, with electrical ozone generator. The house-physician is Dr. Walter Sickles, and the consulting Medical Board consists of Drs. A. L. Loomis, Wm. M. Polk, Charles McBurney, A. A. Smith and Henry F. Walker.

In the case of the dispensary patients it is the design that, while they shall receive the best scientific treatment, their daily work shall be interfered with as little as possible.

One chief object of this enterprise is to establish a cottage home in some healthful region not too far from the city, where for a small sum patients can receive the advantages of change of air and out-of-door life; but this very desirable feature of an institution has not yet assumed definite shape. The formal opening of the city home will occur on the 14th of November. It is in such hospital homes in elevated rural surroundings that the regeneration—apart from the mere care—of the pulmonary cripple from among our urban populations, can be most successfully pursued.

¹ Lancet, May 5, 1894.

MEDICAL NOTES.

An EPIDEMIC OF DERMATITIS EXFOLIATIVA. — An epidemic of exfoliating dermatitis is reported from the Workhouse Infirmary of St. George's-in-the-East, London. Some 30 inmates are ill, and already 17 have died.

THE RIVER SEINE "CATCH" OF 1898. — The following figures are published as a result of the attempt to keep the River Seine clear of cadavera for the year 1893. There were withdrawn from the river 5,652 dogs, 3,307 cats, 9,108 rats, 1,720 fowls and 3,942 other birds, 4,209 rabbits, 789 pigs, 7 calves, 4 hedgehogs, 33 horses, 15 sheep, 2 colts and 13 monkeys.

THE ILLNESS OF THE CZAR. — It is now announced that the Czar Alexander has not Bright's disease, but is the subject of a tumor beneath one of the kidneys. This is pronounced by the Russian medical attendants to be malignant. Dr. Leyden is supposed to take a less unfavorable view of its nature. The London correspondent of the New York Times draws a curious parallel between Sir Morell Mackenzie's relation to the cases of the Emperor Frederick and his German medical advisers, and Professor Leyden's relation to the case of the Czar and his Russian medical advisers. In each instance an alien wife complicates the situation.

BOSTON AND NEW ENGLAND.

Acute Infectious Diseases in Boston. — During the week ending at noon, October 10, 1894, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 90, scarlet fever 33, measles 5, typhoid fever 35. During the week ending at noon, October 17, 1894, the following cases were reported: diphtheria 86, scarlet fever 43, measles 19, typhoid fever 59.

Dr. G. W. GAY, of Boston, who was recently operated on for appendicitis, is now well advanced in his recovery.

A PHYSICIAN TO BE TRUSTRE OF THE BOSTON PUBLIC LIBRARY. — Dr. Henry P. Bowditch has been appointed by the Mayor to be a trustee of the Boston Public Library.

DIPHTHERIA IN SOMERSWORTH, N. H.—A considerable outbreak of diphtheria has occurred at Somersworth, N. H., which has necessitated closing some of the schools.

CLOSURE OF A NEWTON (MASS.) SCHOOL. — The Davis Primary School at West Newton, Mass., was ordered closed last week by the Board of Health on account of two cases of diphtheria among the pupils. The building is to be thoroughly cleansed, and new floors are to be laid.

NEWTON (MASS.) COTTAGE HOSPITAL. — During the last three months there have been, according to the quarterly report of the trustees, 108 patients admitted to the Newton Cottage Hospitals; 103 have been discharged and seven have died.

ANNUAL MEETING OF THE CORPORATION OF THE PERKINS INSTITUTE FOR THE BLIND. — The annual meeting of the corporation of the Perkins Institute for the Blind was held last week. The report of the trustees shows that there are at present 156 pupils at South Boston, 59 at the kindergarten in Jamaica Plain, and 13 in the workshops for adults. The following officers were elected: President, Samuel Eliot, LL.D.; Vice-President, George S. Hale; Treasurer, Edward Jackson; Secretary, M. Anagnos; Trustees, William Endicott, Jr., Edward N. Perkins, Joseph B. Glover, Leverett Saltonstall, J. Theodore Heard, M.D., S. Lothrop Thorndike, Henry M. Howe and George W. Wales.

NEW YORK.

SMALL POX AT PORT JERVIS.—An attack of small-pox has occurred at Port Jervis, Orange County, and in consequence the public schools and library have been closed by the local board of health.

MRS. CRANE'S BEQUESTS TO HOSPITALS.— By the will of Mrs. Angelina Crane, who died September 20th, the sum of \$5,000 is given to each of the three following institutions: St. Luke's Hospital, the Woman's Hospital, and the Home for Incurables.

COLUMBIA COLLEGE. The various departments of Columbia College, including the medical school, opened on Monday, October 1st, and President Seth Low made a short address of welcome to the students in the chapel at the morning exercises. The title of the new Bloomingdale property passed into the hands of the college corporation on October 1st, and if the present site of the college is sold promptly for as much as the trustees expect, the amount thus furnished ought to be sufficient to pay off the standing mortgage of \$1,000,000, and to meet the expenses of moving and fitting up the new grounds for temporary fashion for occupancy. In his report to the trustees for the academic year ended June 30, President Low makes special mention of the very great honor of which Dr. Abraham Jacobi, Clinical Professor of Diseases of Children in the Medical Department, was made the recipient, in being invited to occupy the chair of pediatrics in the University of Berlin, made vacant by the retirement of Professor Henoch. As is well known, Dr. Jacobi declined this honor, on the ground that America had done so much for him that he felt under obligations to do what he could for America by continuing his work in the medical profession here. In relation to this fact President Low expresses the hope that public spirit and intelligent generosity will build and endow a small hospital for children's diseases. He estimates that \$500,000 would be adequate, and goes on to say: "We have the scientific man to give. We have the abundant wealth to provide the means. If only these words come to the attention of the eyes that are ready to see and the mind and heart that are quick to grasp the opportunity, I can scarcely doubt that we have also the generous giver." In the report is also described the incorporation of the Columbia College University

Press, the object of which is to provide for the printing and publication of meritorious works on various subjects, after the manner of the Clarendon Press of Oxford. Among the publications issued from the college will be the following: The School of Mines Quarterly, Bulletin of the Torrey Botanical Club, Psychological Review, studies from the analytical and assay laboratories of the School of Mines, contributions from the herbarium of Columbia College, contributions from the mineralogical and geological departments, studies from the biological department, and studies from the department of pathology, College of Physicians and Surgeons, Columbia College.

NEW YORK STATE MEDICAL ASSOCIATION .- The eleventh annual meeting of the New York State Medical Association, was held at the Mott Memorial Hall on Tuesday, Wednesday and Thursday, October 9th, 10th and 11th, with the President, Dr. Thomas D. Strong, of Westfield, Chautauqua County, in the Among the more important papers were the following: "The International Sanitary Conference of Paris in 1894," by Dr. Stephen Smith, of New York; "The Technique of Cæsarian Section, with Exhibition of Cases," by Dr. A. Palmer Dudley, of New York: "Hysterectomy for Uterine Fibroids by Baer's Method, with Report of Nine Successful Cases," by Dr. Joseph Taber Johnson, of Washington, D. C.; "The Anatomy and Surgical Treatment of Inguinal Hernia in the Male, Illustrated by the Stereopticon," by Dr. Henry O. Marcy, of Boston; "Primary Laparotomy in Tubal Pregnancy," by Dr. Joseph E. Janverin, of New York, and "Tetanus: its Etiology, Pathology and Treatment," by Dr. J. Lewis Smith, of New York. The special feature of the meeting was an elaborate discussion on the Prevention of Tuberculosis, which was opened by Dr. H. M. Biggs, of New York, on the afternoon of the second day, and on the evening of the same day the annual collation occurred. Dr. Austin Flint, of New York, was elected President for the ensuing year, and Dr. E. D. Ferguson, of Troy, was re-elected Secretary and Treasurer.

DEATH OF DR. VIRGINIUS A. TURPIN.—Dr. Virginius A. Turpin died at his residence in New York, October 11th, at the age of seventy-five years. He was a Virginian by birth. For many years he was regarded as a high authority on the subject of cholera, and during the epidemic of the disease in the year 1866, he was called by the Board of Health of St. Louis to assume the direction of the cholera hospitals of that city. A considerable portion of his life was passed in Chicago, where he enjoyed a high reputation and had an extensive practice. About two years ago he removed to New York, and since that time his health has been gradually failing.

SOCIETY FOR INSTRUCTION IN FIRST AID TO THE INJURED .- The first series of lectures, for male and female classes, of the present season, under the auspices of the Society for Instruction in First Aid | Under treatment at last annual report . to the Injured, have just been commenced. As long

ago as 1882 the project for such instruction was inaugurated by a committee of the State Charities Aid Association, of which the late Gen. George B. McClellan was chairman. It met with so much public favor and developed so rapidly that in the following year this committee was re-organized as an independent society, and ever since it has maintained numerous courses of lectures, which have always been well attended. The medical director of the Society is Dr. W. D. McKim and the medical examiners, on whose report the certificate of proficiency are given, are Drs. Ellsworth Eliot, Jr., Hersey D. Locke, and George A. Richards.

MORTALITY .- Dr. John T. Nagle, Registrar of Vital Statistics, reports that the mortality in the city for the week ending October 13th, was the lowest yet recorded in the department. The number of deaths reported was 656, against 690 during the previous week. The average mortality of the corresponding weeks for the past five years was also 690.

Miscellany.

BOSTON DISPENSARY.

The statistics of this institution for the year ending September 30, 1894, are as follows:

The number of new patients treated at the Central Office is 28,487, classified as follows:

Medical Department. — Men, 3,462; women, 5,533; children, 4,417; total, 13,412.

Surgical Department. --Men, 2,403; women, 1,140; children, 1,056; total, 4,599.

Department for Diseases of the Skin. — Men, 809; wo-

men, 550 ; children, 350; total, 1,709.

Department for Diseases of the Nervous System. -Men, 715; women, 658; children, 79; total, 1,447

Department for Diseases of the Throat and Nose. -Men, 893; women, 834; children, 551; total. 2,278.

Department for Diseases of Women. — Total, women,

1.072.

Department for Diseases of the Eyc. - Men, 259; women, 279; children, 172; total, 710.

Department for Diseases of the Ear. — Men, 183; women, 208; children, 244; total, 635.

Department for Diseases of the Genito-Urinary System. Men, 1,358; women, 47; children, 2; total, 1,407.

Department for Diseases of the Rectum and Anus. -Men, 123; women, 76; children, 2; total, 201.

Orthopedic Department. - Men, 30; women 51; children, 20; total, 101.

Dental Department. - Men, 262; women, 275; children, 379; total, 916.

The number of visits made by patients, old and new at the Central Office is 71,079, classified as follows:

Medical, 24,205; surgical, 46,874; total, 71,079.

The number of patients treated in the Districts is 16,265 including 241 cases of midwifery, classified as follows:

Men, 2,918; women, 6,622; children, 7,125; total,

The results of treatment in the Districts are as follows:

Discharged, cured or relieved. Removed to hospitals 14,917 Died . 291 Remaining under treatment . 86 16,347

16,255

The total number of visits made by District physi-	
cians	27,125
The number of patients treated at the Central Office	,
and in the Districts is	44,754
The number of cases of midwifery attended during the	,
Year	241
The number of cases of midwifery attended since July,	
1866	7,293
Whole number of patients since October, 1796	1,248,730
Whole number of patients since July, 1856	1,129,927
	232
Average daily attendance at the Central Office	
Largest number present any one day, March 12th	356
Smallest number present any one day, February 18th	91
Number of recipes put up during the year	73,586
Number of bouse recipes	60,222
Number of District recipes	13,364
Largest number put up in one day, March 12th	394
Smallest number put up in one day, April 13th	110
Number of paid recipes	66,810
Number of free recipes	6,776
Number of paid dental patients	900
Number of free dental patients	16
The list of medical officers is as follows:	

The list of medical officers is as follows:

Surgeons. — Drs. Edward O. Otis, Frederick M. Briggs, Augustus Thorndike, Rufus E. Darrah.

Physicians. — Drs. Robert Disbrow, Thomas M. Rotch, Harold Williams, Edward M. Buckingham, Russell Sturge, James S. Howe, William F. Temple, Henry Jackson, Robert W. Greenleaf, Samuel Breck, George A. Sargent, Edward L. Twombly, William E. Fay, William H. Prescott, John J. Thomas, Augustus S. Knight, William E. Chenery, Horace D. Arnold.

Department for Diseases of the Skin. — Drs. Francis B.

Greenough, Abner Post.

Department for Diseases of the Nervous System. — Drs. Frederick Coggeshall, William R. Woodbury.

Department for Diseases of the Throat and Nose. — Drs. John W. Farlow, J. Payson Clark, Frederick C. Cobb, William S. Boardman.

Department for Diseases of Women. - Drs. Francis H. Davenport, John B. Swift, Rufus A. Kingman, George

Haven.

Department for Diseases of Eye. — Drs. Edward L.

Parks, Frederick A. Davis.

Department for Diseases of the Ear. - Drs. Wallace Proble, Ernest E. Doble. Assistant, Dr. Joseph Hicks.

Department for Diseases of the Genito-Urinary System. Drs. Gardner W. Allen, Charles M. Whitney, John B. Blake, Franklin G. Balch.

Department for Diseases of the Rectum and Anus.— Dr. Walter J. Otis. Assistant, Dr. Joseph C. Stedman. Obstetric Department.—Dr. Charles M. Green. Assis

tants, Drs. Edward Reynolds, Charles W. Townsend.

Orthopedic Department.— Drs. Edward E. Pease, Edwin

Pathologist. — Dr. Edward M. Greene.

Dentist. — Dr. A. H. Fisher.
District Physicians. — Drs. Horace E. Bragdon, Nelson C. Haskell, Malcolm Storer, Benjamin Tenney, Frederic B. Lund, John W. Bartol, Warren F. Gay, Frederick R Tower, Farrar Cobb, Howard A. Lothrop and Charles E. Fillebrown.

Apothecary. — George Lachambre. Wm. H. H. Hastings, Superintendent.

Correspondence.

CYANOSIS FOLLOWING THE USE OF "CAFEBRIN."

Boston, October 5, 1894.

MR. EDITOR: - I think that your readers may be interested in a case in which an alarming cyanosis was caused by the use of powders of so-called "cafebrin." formed that these powders are patented, that their composition is unknown, and that they are advertised to cure head-

Mrs. B., aged thirty-three, consulted me on October 2d for some uterine trouble. Among other symptoms she ning: N., snow. † Indicates trace of rainfall as Mean for week.

complained of violent headsches. I noticed the moment I saw her that the lips and face were blue, and I suspected cardiac trouble complicating the uterine symptoms. On mentioning the fact that her color was peculiar, she said that she had been taking for headache some powders of "cafebrin" which had been put up by a druggist from a prescription given her by her physician. She had taken three that morning — one at 8, one at 10.50 A. M., and one at 12.40 P. M. The time of my examination was 2.80 P. M. The patient informed me that on another occasion the use of cafebrin had caused a peculiarity in the complexion that excited remark among her friends. While in the train coming from a neighboring city she began to turn blue, so that her color was noticed by a lady sitting near her. She felt perfectly well, however, with the exception of the headache, which was not benefited by the powder. Neither she nor her companion was alarmed.

When she arrived at my office the condition of cyanosis was excessive. The face was dusky: the lips and nails were blue. As she lay on my table, with her eyes closed, she looked like a dead person. The pulse was 80, of good quality. The heart sounds were normal. The fingers were cold. The pupils were normal. The respirations were perhaps slightly hurried. She was given about two

ounces of brandy

Being obliged to leave town, I put her in charge of Dr. Brewster, who stayed until her symptoms had subsided.

The chief symptom in this case - cyanosis - seems to me very interesting, following, as was alleged, the use of cafebrin. The existence of cyanosis is quite as inexplicable as the complete absence of discomfort or other physical evi-dence of incomplete blood-aeration. Whether the effect of the drug was to prevent oxidation, or whether by its action the blood was directly changed in some way — these are interesting questions in connection with this case, which a knowledge of the composition of the powders might help solve. On the other hand, the cyanosis may have been a coincidence. That the symptoms were due to this remedy seems very positive in view of the facts: First, that the powders were put up from a prescription calling for

Cafebrin, S. One; repeat in three hours.

Second, that the peculiar color appeared a few hours after the ingestion of the first powder and soon after that of the second. Third, that a similar attack followed the use of the powder on another occasion. And, finally, that usually there is nothing peculiar about the patient's color.

The case illustrates one of the dangers of prescribing patent medicines the composition of which we do not know. While the condition may not have been at all serious, yet the general appearance of the patient was certainly alarming.

Yours very truly,

M. H. RICHARDSON.

METEOROLOGICAL RECORD,

For the week ending October 6th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:-

	Baro- meter	Thermom- ter eter.		Relative humidity.				etion rind.	Velocity of wind.		We'th'r.		inches.	
Date.	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 ▲. Ж.	8.00 P. M.	Daily mean.	8.00 ▲. Ж.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Rainfall in in
S30 M 1 T 2 W 8 T 4 F 5	30.06 29.92 29.93 29.99 29.82 29.70 30.00	56 54 54 58 62 64 56	58 59 61 65 66 70 64	54 48 48 51 59 58 49	93 85 58 64 89 85	76 74 60 86 90 56	80 59 75	N.E. S.E. S.W. W.	N.E. S. N.E. S.E. S. W.	24 6 12 9 7 10 12	25 5 9 5 10 13 16	R. O. O. T. O. C.	R. C. O. O. F. C.	.20 •22
														.42

RECORD OF MORTALITY

FOR THE WERK ENDING SATURDAY, OCTOBER 6, 1894

	'nď	the	. 5	Percentage of deaths from						
Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Infectious diseases.	Consump- tion.	Diarrhoal diseases.	Typhoid fever.	Diphtheria and eroup.		
New York	1,956,000	690	294	18.46	10.78	9.24	2.38	8.78		
Chicago	1,438,000	-	- 1	_	_	l . –	i . .	_		
Philadelphia .	1,139,457	369	126	17.94	11.70	5.20	1.30	10.14		
Brooklyn	1,013,000	426	197	23.46	10.81	18.11	.92	11.65		
St. Louis	540,800	-	-	_	-			_		
Boston	501,107	234	87	21.93	10.75	7.31	1.72	10.75		
Baltimore	500,000	—		_	_	 .				
Washington .	285,000	119	40	19.55	18.60	11.05	5.10	8.40		
Cincinnati	325,000	87	22	17.85	14.28	4.76	8.57	8.33		
Cleveland	325,000	84	30	19.04	8.33	7.14	3.57	2.3e		
Pittsburg	272,000	-	_	_	! —	-	_	_		
Milwaukee	265,000	_	_	_						
Nashville	87,754	30	8	10.00	13.83	3.33	8.33	3.33		
Charleston	65,165	36	11	19.46	2.78	3 .56	2.78	_		
Portland	40,000	_						=		
Worcester	100,410	23	10	43.50	13.05	17.40	18.05	13.05		
Fall River	92,233	47	38	34.08	6.39	31.96	2.13	. ==		
Lowell	90,613	85	19	28.60	2.86	22.88	_	2.86		
Cambridge	79,607	29	13	44.85	18.90	10.85	_	_		
Lynn	65,123	_	_				_	_		
Springfield	50,284	5	2	20.00	20.00	20.0∪	_	_		
Lawrence	49,900	=	_			9.02	9.02	_		
New Bedford .	47,741	21	4	18.04	9.02		9.02	_		
Holyoke	43,348	9	4	66.66	22.22	55.55	_	_		
Brockton	33,939	1.4	0		_	00 70	7.14	_		
Salem	83,155	14	7	35.70		28.56	1.12	_		
Haverhill	32,925	17	8		5.88	9.09	_	_		
Malden	30,209	11	3 5	9.09	9.09		_	25.00		
Chelses	29,506	12		41.65	16.66	8.83 25.00	_	20.00		
Fitchburg	29,388	8 11	5 2	25.00	12.50	9.09	18.18	27.27		
Newton	28,837	11	2	54.54	9.09	8.09	10.10	2(.21		
Gloucester	27,293	15	4		26.66	_	=	26.66		
Taunton	26,955			26.66		_				
Waltham	22,058	4	2	2 5.0 0	25.00			25.00		
Quincy	19,642	5	4	_	_	_		_		
Pittefield	18,802		2	16.66	16.66	_	=	_		
Everett	16,585	6	1		10.06	16.66		_		
Northampton .	16,331	3	0	16.66	66.66	10.00	_	_		
Newburyport .	14,073		ו טו		00.00	_	_			
Amesbury	10,920	2	2	50.00		50.00		ľ		

Deaths reported 2,407: under five years of age 952; principal Deaths reported 2,407: under nve years of age 502; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 500, consumption 266, acute lung diseases 200, diarrheal diseases 230, diphtheria and croup 155, typhold fever 56, scarlet fever 19, whooping-cough 12, malarial fever 9, cerebro-spinal meningitis

whooping-cough 12, malarial fever 9, cerebro-spinal meningitis and measles 6 each, small-pox 2.

From scarlet fever New York, Boston and Cleveland 4 each, Cambridge 3, Philadelphia 2, Lowell and Marlborough 1 each. From whooping-cough Brooklyn 4, New York 3, Cambridge 2, Philadelphia, Boston and Cleveland 1 each. From malarial fever New York and Charleston 4 each, Cambridge 1. From cerebro-spinal meningitis New York 2, Philadelphia, Cincinnati, Holyoke and Chelsea 1 each. From measles New York 4, Brooklyn 2. From small-pox New York and Philadelphia 1 each.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 6, 1894, TO OCTOBER 12, 1894

By direction of the acting Secretary of War, CAPTAIN GEORGE E. BUSHNELL, assistant surgeon, will be relieved from duty at David's Island, N. Y., by the commanding officer of that post on the receipt by him of this order and will then report in person to the commanding officer Fort Hamilton, New York, for duty at that post, reporting by letter to the commanding general, Department of the East.

By direction of the acting Secretary of War, the extension of leave of absence granted Captain C. N. B. Mycauler, assistant surgeon, in S. O. 55, Department of the Colorado, September 14, 1894, is further extended one month.

Upon arrival of MAJOR JOSEPH K. CORSON, surgeon, at Fort D. A. Russell, Wyoming, FIRST-LIEUT. GEORGE DESHON, assistant surgeon, will be relieved and ordered to Fort Logan, Col., for duty

Upon abandonment of Fort Sully, South Dakota, CAPTAIN ALFRED E. BRADLEY, assistant surgeon, is ordered to Fort Keogh, Montana, for duty.

Upon abandonment of Fort McKinney, Wyoming, First-Lieut. Henry A. Shaw, assistant surgeon, is ordered to Fort rara, Nebraska, for duty.

Upon abandonment of Fort Bowie, Arizona, CAPTAIN JEFFER-SON D. POINDEXTER, assistant surgeon, is ordered to Fort Riley. Kansas, for duty.

Upon abandonment of Mount Vernon Barracks, Ala., Major Curtis E. Munn, surgeon, is ordered to Benicia Barracks, Cal., relieving Captain Ogden Rafferty, assistant surgeon.

CAPTAIN RAFFERTY, on being relieved by MAJOR MUNN, is ordered to Presidio of San Francisco, Cal., for duty.

FIRST-LIEUT. CHARLES E. B. FLAGG, assistant surgeon, relieved from duty at Presidio of San Francisco, Cal., and ordered to Angel Island, Cal., for duty.

MAJOR VAN BUREN HUBBARD, surgeon, relieved from duty at Fort Spokane, Washington, and ordered to Fort McPherson, Georgia, for duty at that station.

Upon abandonment of Fort Marcy, New Mexico, Major James P. Kimball, surgeon, is ordered to Fort Wingate, New Mexico, for duty.

Upon arrival of Major Kimball at Fort Wingate, Captair C. N. B. Macauler, assistant surgeon, will take station at Fort Apache, Arizona, for duty, relieving Lieut. M. W. Ireland, assistant surgeon.

LIEUTENANT IRELAND, on thus being relieved, will take station at Fort Stanton, New Mexico, relieving FIRST-LIEUT. F. B. KEEFEE, assistant surgeon.

FIRST-LIEUT. KEEFEB, on being relieved, will proceed to and take station at Washington Barracks, D. C.

Upon abandonment of Fort Supply, Oklahoma Territory, MAJOR CURTIS E. PRICE, surgeon, will proceed and take station at Fort Sill, Oklahoma Territory.

FIRST-LIEUT. ISAAC P. WAVE, assistant surgeon, is relieved from duty at Fort Supply, Oklahoma Territory, and ordered to Camp Eagle Pass, Texas, for duty.

Upon arrival of FIRST-LIEUT. WAVE at Camp Eagle Pass FIRST-LIEUT. ALEXANDER N. STARK, assistant surgeon, will return to his proper station at Fort Sam Houston, Texas.

Upon abandonment of Fort Mackinso, Michigan, Captain E. F. Gardner, assistant surgeon, is ordered to Boston, Mass., for duty as attending surgeon and examiner of recruits, relieving Major M. W. Wood, surgeon, who, on being thus relieved, will proceed to take station at Buise Barracks, Idaho, to relieve Captain William Stephenson, assistant surgeon.

CAPTAIN STEPHENSON, on being thus relieved, will proceed to and take station at Vancouver Barracks, Washington.

By direction of the Secretary of War, leave of absence for twenty-five days, to take effect upon his relief from duty in Boston, Mass., is granted MAJOR MARSHALL W. WOOD, surgeon.

By direction of the Secretary of War, CAPTAIN FRANCIS J.
IVES, assistant surgeon, having proceeded with troops to Fort
Ethan Allen, Vermont, is relieved from further duty at Fort
Sheridan, Illinois, and will remain on duty at Fort Ethan Allen, Sheridan, Illinois, and will remain on duty at rott belian Allon, until the arrival thereat of Captain Albon H. Appel, assistant surgeon, when he will report in person to the commanding officer, Plattaburgh Barracks, New York, under the requirements of Par. 10, S. O. 221, A. G. O., September 20, 1894.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. - A regular meeting of the Society will be held on Monday, October 22, 1894, at the Medical Library, 19 Boylston Place, at eight

o'clock, P. M.
Drs. C. L. Scudder and F. B. Lund: "Middle Meningsal Hemorrhage following Injury to the Skull." Discussion opened by Drs. J. Collins Warren, J. W. Elliot, G. L. Walton and W. N. Bullard.

Dr. C. F. Withington: "Meta-Pneumonic Empyema." Discussion opened by Drs. A. L. Mason, E. N. Whittier and Henry Jackson.

John T. Bowen, M.D., Secretary. Jackson.

SUFFOLK DISTRICT MEDICAL SOCIETY.— There will be a stated meeting at 19 Boylston Place, on Saturday, October 27,

Paper: Dr. A. T. Cabot, "Genito-Urinary Tuberculosis."
Discussion by Drs. Abner Post, E. S. Wood, Wm. F. Whitney,
Paul Thorndike, E. W. Dwight, F. G. Balch and J. B. Ogden.
Incidental Business: 1. Choice of a Committee of Five to pre-

pare a List of Candidates for Officers of the Society.

2. Reading of Amendments to the By-laws of the Massachusetts Medical Society.

Supper after the meeting.

Notice. Members are requested to send to the Secretary corrections or change of address for the next catalogue H. L. SMITH, M.D., Secretary, 156 Newbury Street.

RECENT DEATH.

DR. WILLIAM H. TODD, died at St. Stephen, N. B., October 7, 1894. He was a graduate of Bowdoin College and a member of the College of Physicians of Edinburgh.

Original Articles.

THE CONTAGIOUSNESS AND CONTROL OF LEPROSY.

BY JAMES C. WHITE, M.D., Professor of Dermatology in Harvard University.

It should be wholly unnecessary, but I feel that is due to myself, to state that it is of course impossible to present in any proper form the important subject assigned to me in the inadequate time allotted me. I could in a fraction of it make the categorical statement that leprosy is a contagious disease, and that it has never been, and never can be controlled except by national laws of isolation; but the only and proper reply by those of a contrary opinion to such a presentation would be a denial as simple and categorical. Yet I can scarcely do more than this in my fifteen minutes. You see, therefore, the impossibility of making more than the briefest mention of the evidence upon which my opinions are based. I can only present in the baldest way the text for the discussion which is invited.

It will be well to consider first what should constitute the proof of the contagiousness of a disease.

This should be based upon the following points:

- (1) The history of its action upon communities or nations.
 - (2) The study of its action upon individuals.
- (3) Its resemblance to other affections generally regarded as contagious.
- (4) The establishment of a satisfactory cause of such contagion.
- (5) The influence of control upon its history and course.

Let us apply these test questions to the disease we are considering.

THE HISTORY OF ITS ACTION UPON COMMUNITIES AND NATIONS.

You know as well as I the history of its course in Mediæval Europe. Introduced from the East, the boundless home of so many scourges, it became a pestilence of so overwhelming proportions, that no influence of heredity alone could possibly account for its spread. Many thousands of lazarettos were erected to care for it, and the sternest laws enacted to control it. Belief in its contagious nature was then universal. It lingers yet in by-places and border districts of Europe, whilst in its old seats in the Orient it still plays havoc with mankind. In India, it is estimated, there are two hundred and fifty thousand lepers to-day.

This glance backwards shows us how prone are the human tissues to the inception of the disease under favorable conditions, without distinction of race. But it is in the history of its introduction and course among virgin nations in our own day that this subject may be best studied. The extraordinary rapidity of its spread in the Hawaiian Islands can no more be accounted for on other grounds than its infectious nature, than can the appalling ravages of measles among the people of the Fasoe Islands when first imported thither. The peculiar social customs of the Sandwich-islanders will readily account for the vast percentage of those affected. A study of its recent introduction into British Guiana and Trinidad demonstrates in the same conclusive manner that its rapid increase among those

¹ Read at the Congress of American Physicians and Surgeons at Washington, May 30, 1894.

peoples could not possibly be accounted for, except by infection from person to person. And in still smaller communities this method of dissemination is even more strikingly illustrated, as witnessed in New South Wales, in Parcent, Spain, in Cape Breton, and in its revival in Louisiana. References to such modern instances might be largely multiplied, but these are enough; for if it can be demonstrated that the course of the disease in one nation, or in one small community, can be reasonably explained only through its contagious and infective nature, we need seek no other explanation of its ravages in all lands and all ages.

II. THE STUDY OF ITS ACTION UPON INDIVIDUALS.

Extraordinary difficulties stand in the way of the settlement of our question by a positive demonstration of its capabilities of transference from person to person on account of its long period of incubation. expose a person to the emanations of variola, and we see the result in a few days; to contact with another infected with syphilis, and the results declare themselves in a few weeks; to contact with the materies of tuberculosis, and the effects may be apparent in a few months; but with leprosy we have reliable data to prove that the disease may not declare itself for years. two, five, or even ten, after a person has been exposed to its influence. Such a retardation of the tangible effects of contagion renders direct historical proof in individual cases almost an impossibility. Again, the tissues of other animals than man, already tested, show themselves utterly indifferent to inoculation experiments, so that we get no response to such methods of investigation. Let us hope ere long some animal as susceptible to the bacillus of lepra, as is the guineapig to that of tuberculosis, may be discovered. The possibilities of using human tissues for such a demonstration in satisfactory sufficiency is too remote for serious consideration. It is true that such experiments have been made. I have seen it claimed that thirty-six persons in Norway and Italy were formerly inoculated and without result, but I am unacquainted with the details of the experiments, whether active bacilli were employed or not, and do not know how long these persons were kept under observation subse-The results were simply negative, and therefore without positive value. Who knows that the artificial inoculation of syphilis conducted in the same way might not result in similar failure. Consider the history of such experiments with favus. certain date attempts to transfer the disease from one host to another at will were almost always unsuccess-Now that we know how to do it, this is accomplished with certainty. One inoculation practised by a competent person and in a proper manner of recent date has, as you know, been followed by leprosy. You are all familiar with this experiment of Arning at Hawaii - how pus from a leprous ulcer containing bacilli was injected into the skin, and a bit of leprous tubercle was transplanted into the arm of a condemned criminal, who was then isolated; and how three years subsequently leprosy declared itself, and progressed to full development. Unfortunately the experiment cannot be considered absolutely conclusive, as the victim might have been infected beforehand. But it is not likely to be soon repeated.

We must rely, therefore, upon data of clinical nature for our evidence. We shall find this partly in a careful study of the beginnings of endemics of the disease in small communities, as in that of Louisiana, Cape Breton, and Trecadie, as detailed by myself elsewhere; 2 in the reports of Hawaiian physicians of its dissemination throughout those islands; in the account of its recent importation into a small village in Spain, by Zuriaga, and in the cases recently cited by Dr. Lorand at a late meeting of the Vienna Dermatological Society. Another class of evidence is that of the acquisition of the disease by immigrants of non-leprous nationality into leprous countries, but of this there are so many instances on record that I need only allude to it. More important is the fact of the frequent development of the disease among the personal attendants of non-I will mention a few such leprous stock upon lepers. A nun, and a wardinstances of recent occurrence. tender in a Guiana lazaretto became lepers. Russia three clergymen from healthy districts became infected after removing to leprous districts and associating with lepers. In Bergen two ward-tenders have become lepers. In New Orleans a priest has acquired In Hawaii twenty-five white residents the disease. are lepers, of whom two are physicians, and three priests, and Father Damien, at last. Twenty of the ward-attendants at Molokai have become affected. Who would for a moment think of explaining such occurrences in hospitals for syphilis except through contagion? The case of Father Damien alone, to cite the one best-known example, is enough to establish the contagious nature of the affection, and to outweigh limitless data of a negative character.

III. RESEMBLANCE TO OTHER AFFECTIONS GENERALLY REGARDED AS CONTAGIOUS.

There are two diseases to which leprosy bears a strong likeness, namely, tuberculosis and syphilis. All three of them are still mighty scourges of the human race, and prevail over all parts of the earth. Two of them have had periods of intensified activity within historic epochs in Europe, raging as vast national epidemics. The other has done its fatal work uniformly and incessantly, never exhibiting such extraordinary and spasmodic effects as to deserve the title of pesti-They are slow in their development and course, and their effects upon the cutaneous tissues are manifested by the most pronounced lesions the skin is capable of exhibiting. They affect nearly all the other structures of the body as well, showing respectively predilections for special tissues, and eventually profoundly impress the whole economy. The anatomical changes in the cutaneous tissues produced by them, although not identical, are sufficiently analogous to have been placed in one group by pathologists, before the similar causative element of the same had been demonstrated. One of them has always been regarded as contagious, another was uniformly considered as such whilst it was most active in its destruction among civilized nations, and until overcome by the universally enforced practice of seggregation or isolation mankind outgrew its dread of it, and physicians in later times their knowledge of it. The other has only within the latest time come to be generally recognized to be infectious. All three have been held to be hereditary affections, but as their real nature has become at last understood, it may be said that heredity, although not improbable, is no longer essential to explain their continuance among mankind, for if a disease be proved to be contagious, its alleged hereditary character is

² American Journal of Medical Sciences, October, 1882.

certainly an unnecessary explanation of its endemic or epidemic occurrence, and contagion is a much more direct and easily understood method of transference from individual to individual than hereditary transmission. But if a disease be both hereditary and contagious, it is far more important to recognize the latter principle, because its effects are more preventable by State and professional control. All three affections are alike essentially of non-venereal nature, although one of them is so frequently transferred through venereal relations. Their strong resemblance to each other suggests an intimate relationship in etiology and pathology.

IV. ESTABLISHMENT OF A SATISFACTORY EXPLANA-TION OF ITS CONTAGIOUSNESS.

With the discovery by Hansen of the bacillus lept a, the cause of its contagious nature was demonstrated as clearly as was that of tuberculosis earlier by the similar discovery of Koch. That of syphilis remains to be conclusively established. That this has not yet been accomplished in no measure invalidates the presumption that it will be. We simply await the requisite knowledge of reagents. This will surely come, and then we shall have completed the proof of the close analogy of these three great diseases in all points.

Leprosy is pre-eminently a bacillus disease, for this organism is found in rich abundance in human tissues - chorium, mucous membranes, nerves, blood-vessels, ovary, testicle, glands, and the great organs; in the blood, lymph, tears, saliva, nasal and intestinal mucus. milk, vaginal secretions, the discharges of ulcers, and all cutaneous lesions, excepting those secondary to nerve changes. Could any infectious material be more generally or favorably distributed for direct transference to other hosts? How can any one who admits the infectious properties of the tubercle bacillus reasonably deny the same quality to that of leprosy, or seek a more rational explanation of its extension among mankind? And although we have yet to learn how to make pure cultures of bacillus lepræ, as we can with that of tubercle, as well as to discover an animal as responsive to its action as is the guinea-pig to that of the latter, yet our ignorance upon these points with regard to the infective materies of that still more contagious third affection, syphilis, is still more profound as yet. Should we ask in these days more substantial proof of the infectious, or contagious, or inoculable character of any affection than the demonstration of its bacillus nature?

V. INFLUENCE OF CONTROL UPON ITS HISTORY AND COURSE.

Let us now consider what has been the effect of the opposing opinions held from time to time by our profession concerning its contagious character upon its course among civilized nations. You know as well as I the views with regard to its unclean and infectious nature among Biblical nations and in Mediæval Europe. How the leper was segregated, regarded as a moral monster, forbidden to pass through public ways without a special garb, or bell, or clapper, and how the monks in charge of lazarettos were obliged to wear upon their breast the red letter L. In later centuries when the disease had been thus controlled and confined to a few European districts, the belief grew up, chiefly through the conclusions of Boeck and Danielson in Norway, and the reports of physicians from various

regions, mainly of negative character, collected by Virchow and the English College of Physicians — that it was not contagious, but was endemic because hereditary. Scarcely any one thought of questioning this dictum. At the meeting of the first International Medical Congress, held at Philadelphia in 1876, I called attention to the prevalence of the disease in the United States to a greater extent than was generally known, and again in 1882 I presented a paper upon the subject to the American Dermatological Association. My conclusions that the disease was increasing to an alarming extent in this country, and that it was contagious, found then but few supporters among my colleagues. Since then professional opinion has greatly changed. You have heard just now from Dr. Hyde how many important foci of the disease lie within and close around our borders. You know the story of Hawaii and Molokai, the conversion of the profession there largely to the belief in its contagious character, and the fatally tardy efforts of the Government to control it by isolation.

In Norway and Sweden, that nursery of the modern doctrine of non-contagion, where the disease had increased in consequence to an alarming extent, a change of policy has taken place. In 1885 the Government passed laws authorizing the transfer and confinement within lazarettos of all lepers who are unwilling or unable to be isolated elsewhere in such manner as to prevent contagion in the family. It permits also the compulsory separation of married people. Since then the disease has been constantly diminishing. In 1870 the number of cases in Norway was 2,607; in 1893 it had been reduced to 800.

In the Russian Eastern Maritime Provinces the disease has become so prevalent that lazarettos have been established in several places. In New South Wales it has increased so much of late among European residents that a law for compulsory isolation was adopted in 1890. In Trinidad there were three cases in 1805, 860 in 1878. In British Guiana there were 105 cases in 1860, last year there were 1,000 cases.

Thus the disease shows itself increasing rapidly wherever it is granted free license, and diminishing where properly controlled. The late Dr. Morrell Mackensie, in his essay on "The Dreadful Revival of Leprosy," said, "It is impossible to estimate the total number of lepers now dying by inches throughout the world, but it is certain that they must be counted by millions." This vast destruction of human life and the incalculable misery the disease is producing among mankind is, I believe, a direct consequence of the license which has been granted it by our profession and the nations under the mistaken faith in its noncontagious character.

But how is such unbelief explicable, how is any diversity of opinion as to the communicability of the affection possible in the face of the facts I have thus briefly laid before you? Why should leper commissions be still seeking some other explanation, and one of the most distinguished surgeons of the day still

s Prof. C. Boeck, of Christiania, under date April 30, 1894, wrote me as follows: "The chief contents of the actual law on lepra and lepers in Norway, of June 6th, 1885, is the following: 'Poor lepers, who are supported by the parish, ought, as a rule, to be isolated in the public hospitals for leprosy.' When such poor lepers are not recome (in their homes) or cared for in such a manner as 'the sanitary commission after the circumstances find to be safe. In the case of pauper lepers, however, the 'commissioners of paupers' and lepton form their families and other people, which, however, solated in the salid hospitals, they should be lodged in separate not obey this order they can be isolated in a hospital. The isolatory commission after the circumstances find to be safe. In the case of pauper lepers, however, the 'commissioners' of paupers' as a coording to this law, may, if necessary, be carried out by the sanitary commission, be ordered to live in safe the parish clergyman and district physician. Even other lepers (not parish clergyman and district physician. Even other lepers (not parish clergyman and district physician. Even other lepers (not paupers) may, by 'the sanitary commission,' be ordered to live in safe the parish clergyman and district physician. Even other lepers (not parish clergyman and district physician. Even other lepers (not parish clergyman and district physician. Even other lepers (not parish clergyman and district physician. Even other lepers (not parish clergyman and district physician. Even other lepers (not parish clergyman and district physician. Even other lepers (not parish clergyman and district physician. Even other lepers (not parish clergyman and district physician. Even other lepers (not parish clergyman and district physician. Even other lepers (not parish clergyman and district physician. The parish clergyman and district physician.

maintain that it is caused by one article of diet, and others cling to the doctrine of heredity as the allsufficient cause of its continued existence? Partly, in my opinion, because of the prolonged incubative stage of the disease, and the wholly unwarranted reliance upon data of negative character. Just as strong evidence of the kind can be adduced against the contagious nature of tuberculosis and syphilis. X, a leper, lies in a hospital bed next to V, with syphilis. Their skins are abundantly occupied by the lesions of their respective affections in all stages of development. Ward-tenders, nurses, and physicians care for them with like indifference for months, and ordinarily with no ill results to themselves. The same patients have also lived for months, it may be, in the same condition with their families, and yet the latter have not contracted the disease. Do you not all know this to be true of syphilis in thousands of instances, and yet do you use them as evidence of its non-contagiousness? Why then apply such data to leprosy? On such negative evidence both affections should be,

equally pronounced non-infectious.

And what sounder evidence have we that leprosy is hereditary? No case of congenital leprosy has been observed, and the disease rurely affects children before the age of five. Leprous parents transmit no cachexia or constitutional degeneration to their offspring. We have no proof that a child born of leprous parents has become leprous, if removed immediately after birth to surroundings free from infection. Not one of the descendents of the one hundred and sixty leprous immigrants to the Northwestern States had become a leper at the time of Hansen's visit in 1887, and in but two of the children born at Molokai has the disease Without denying the possibility of the transmission of leprosy by descent, its apparent occurrence in any instance should not be accepted without the absolute demonstration of the impossibility of inoculation during or after birth. I believe the theory of heredity to be a very dangerous one, and that the sterner judgment of the Middle Ages, which made the leper individually the responsible agent rather than the progenitor, must again be adopted before the affection can be exterminated. We are dealing every day with infectious diseases, of the infecting properties of which we have no definite knowledge, and yet we should consider ourselves guilty of criminal conduct, if we should on this account refuse to acknowledge their contagious character. But in the case of leprosy we do know why it should be contagious, and the conditions which should be favorable to its inoculation. The burden of proof that it can be communicated in any other way is wholly with those of a contrary opinion.

THE PREVENTION AND CONTROL OF LEPROSY IN THE UNITED STATES.

If, then, we admit the contagious character of the disease, what measures should be taken for its exclusion from, and repression within our country? Is isolation effective, or necessary, or justifiable? Should

immigration from infected nations be prohibited? have already shown the favorable operation of such stringent measures in past times, the fatal error of their negligence, and the recognition of the necessity of their revival by other nations of the present day. What is our own duty in the matter? We have a considerable and ever-increasing number of lepers amongst us, distributed in numerous foci, which are known. have individual cases also scattered over the whole country, a small proportion only of which, I believe, are known to physicians, and this is by far the most dangerous class, because they cannot be shunned. We have all met a few of them. They are free to come and go, and dwell where they like. We shall never control or eradicate the disease without resorting to strong measures, and the sooner they are enforced the better. If we wait until their necessity is more apparent, these results will be of far more difficult accomplishment.

I recommend to the serious consideration of this Congress the following propositions:

(1) Every physician should be compelled by State law to report to the nearest board of health the existence of a case of the disease, and the neglect to do so on the part of a medical attendant, or a member of the leper's family, should be a penal offence.

(2) Immigrants affected by the disease should be arrested at ports of entry and along our borders, and turned back to their previous homes by the authority

of the national board of health.

(3) Graded hospitals should be established by the National Government, in suitable insular localities where possible, within which both suspected and confirmed cases should be confined, and to which all access should be prevented excepting under proper restrictions.

Such compulsory isolation may be considered cruel to the few, but its longer neglect on our part is certainly a greater cruelty to the many, for in no other way shall we exterminate this most miserable disease. There can be no doubt that the advice of this body would have great influence in determining the action of State and National boards of health in the establishment of such measures for the public safety.

A STUDY OF THE EYES OF 220 SCHOOL CHIL-DREN IN THE WORCESTER CITY SCHOOLS.

BY EDWARD SWASEY, M.D., WORCESTER, MASS., Oculist and Aurist to the City Hospital; Fellow of Massachusetts Medi-cal Society; Fellow New York Academy of Medicine.

In the New York Medical Record, for February 10, 1894, appears an editorial on "The Modern Eye," and the opening sentences are these: "An enormous amount of statistics is accumulating regarding the modern eye and its relation to disease. It has been abundantly proven that under the influence of civilization this organ is undergoing decided change, and that often it is not equal to the work which it is called upon to perform. Referring only to the subjects of refraction and accommodation, Roosa and Emerson have shown that only about one person in ten has an emmatropic eye; the remaining nine being hyperopic or myopic." When one reviews how much has already been done, and so well done, in the study of refraction of children's eyes, it may seem like thrashing old straw to still be compiling statistics on the subject. But still

more perfected instruments whereby we can study the eye objectively rather than subjectively enable us to make finer distinctions than a few years ago. By the aggregation of atoms large masses are formed and statistics give us a proper basis from which broad and general conclusions should be drawn in this as in all other branches of medical science.

The first object of the writer, in studying these cases, was to ascertain how many children with apparently perfect eyes and vision yet had some defect when carefully examined. Several hundred printed circulars were placed in the hands of the principals of a number of the schools of this city to be distributed among the scholars from the ages of eight to fifteen years. Those with no defect in the vision, and without any eye trouble, were urged to submit to examination as well as those who had some trouble. The result was that 220 children were examined at my office in order to have exactly twenty feet for reading distance; to have a uniform light on the type at this distance, secured by a gas burner behind a white painted reflector; to have a perfectly dark room for the ophthalmological examination, and make use of Javal's ophthalmometer to ascertain the corneal astigmatism.

It may be well to state here that perfect sight is expressed by 28; that is, a certain size of letter should be seen and read at twenty feet distance, another size should be seen fifteen feet, and another size ten feet. On the other hand, lines of letters are printed which should be seen thirty feet, again forty feet, fifty feet,

and so on.

There were 140 girls; 80 boys; and with the exception of 14 in the lower grades at school they were found in the fourth to the ninth, inclusive. More than half the girls had perfect vision in each eye, and the same may be said of the boys.

Boys with vision $\frac{20}{20}$ to $\frac{20}{10}$ each eye, Girls with vision $\frac{20}{20}$ to $\frac{20}{10}$ each eye,	44 76	120

Table 1.		
Boy's vision perfect in one eye, imperfect in other,	7	30
Girl's vision perfect in one eye, imperfect in other,		ĐΨ
Right eye perfect,	10	
Left eye perfect,	20	
Right eye had hyperopic astigmatism,	12	
Right eye had myopic astigmatism,	3	
Right eye had simple hypermetropia, .	4	
Right eye had simple myopia,	1	20
Left eye had hyperopic astigmatism, .	6	
Left eye had myopic astigmatism,	2	
Left eye had simple hypermetropia,	2	
Left eye had simple myopia,	0	10

It appears from this table that the right eye was defective in vision twice as often as the left, and that the cause was found and measured in the right twice as often as in the left. I know of no reason for this, and am disposed to look upon it as only a coincidence.

There remain, therefore, 70 children (or 140 eyes out of 440) who have both eyes defective in vision, or fall short of 38. These are tabulated as follows:

TAB	LE II.			
Vision \$0 to \$0, Boys, 8.	 Girls, 22.	•	•	80
Vision 48 to 48,	Ciale 0	•	•	11
VISION 75 to 355,	Cirla K	•	•	9
Vision $\frac{20}{200}$ to $\frac{8}{200}$, . Boys, 4.	Girls, 3.	•	•	7

The causes were found as follows:				
30 TO 30 CLASS.				
Simple hypermetropia,		•	10	
Simple myopia,			2	
Hyperopic astigmatism,		•	5	
Myopic astigmatism,	•	•	7	
Compound hyperopic astigmatism,		•	3	
Mixed astigmatism,	•	•	_3	30
28 TO 38 CLASS.				
Simple hypermetropia,			2	
Simple myopia, Hyperopic astigmatism,			2	
Hyperopic astigmatism,			0	
Myopic astigmatism,			3	
Compound hyperopic astigmatism,			2	
Compound myopic astigmatism,		•	1	
Old corneal blur,		•	_1	11
$\frac{20}{70}$ TO $\frac{20}{200}$ CLASS.				
Simple myopia,			2	
Myopic astigmatism	•		2	
Hyperopic astigmatism,	•	•	_5	9
200 TO 230 CLASS.				
Simple myopia,			1	
Myopic astigmatism,			1	
Compound myopic astigmatism,			3	
Old corneal blur,		•	1	
Nystagmus,	•	•	1	7

In a class by themselves I have tabulated the remaining 13 children, all of whom had astigmatism against the rule.

HYPERMETROPIA. - That the great majority of children are farsighted (hypermetropic) has long been known, and even perfect distant vision is compatible with quite a degree of this error, if it be uncomplicated. In the 120 children with perfect vision in each eye, 33 had uncomplicated hypermetropia in each eye. we have 66 eyes in this class, or one eye in 3.63 eyes, in which simple hypermetropia was easily detected with the ophthalmoscope and without the use of any mydriatic. There were 36 eyes in the various other classes in which simple hypermetropia was found, or 102 eyes in a total of 440, = 1 in 4.32. Moreover, in the great majority of children, of the 120 with perfect vision, they would accept a plus glass on each eye separately from .50 to .75 dioptrics, or on both together from 1. to 150 dioptrics, though the ophthalmoscope indicated very nearly emmatropia.

HYPERMETROPIC ASTIGMATISM. -—If simple uncomplicated hypermetropia in mild degree be of very little concern, and in fact the rule, in the eyes of children, hyperopic astigmatism even in low degree cannot so easily be disregarded. This is especially true when the eyes are taxed over books, drawing, study of maps, etc. Its location is in the cornea, and is therefore a fixed error and beyond removal by the accommodative apparatus of the eye. But this same apparatus is in constant effort to secure a perfect retinal image through an imperfect medium. The eye is naturally satisfied with nothing short of a perfectly formed retinal image, and a close approximation to this brings on an effort to perfect it. A slight imperfection in the contour of the cornea for this reason not infrequently worries an eye quite as persistently as a larger error, which at best permits of but imperfect vision.

That hyperopic astigmatism of from 1. to 1.50 dioptrics may not seriously impair distant vision is well known. Among the 120 with both eyes perfect vision | 1 See Journal, March 10th, 1892.

there were 11 boys and 22 girls who had in each eye astigmatism of 1. to 1.50 dioptrics, and were all hyperopic astigmatics. Thus, of 66 eyes in this class, and 10 of the 13 who had this same amount of astigmatism and yet had perfect vision, found in Table I, a total of 86 eyes in 280 which have perfect vision and yet a marked defect in structure. It indicates that perfect vision is not by any means equivalent to a faultless eye in a young person; and if we trust solely to a subjective examination in these patients, we shall be led astray frequently, unless we subject the eye to full mydriasis, which means a good deal of annoyance and time. Still it was only a few years ago that an ophthalmologist of large experience in New York regarded it as almost a waste of time to attempt to hunt down, or even regard, a possible astigmatism in a young person I was then examining who had vision of \(\frac{20}{20} \) or \(\frac{20}{20} \). Possibly he was right if it meant the full effect of atropine, but he was not then aware of the simplicity and accuracy of the ophthalmometer of to-day. It was then just being introduced into the Manhattan Eye and Ear Hospital, and he, like many another who believed the old method good enough, was regarding it as a nine days' wonder that would soon be cast aside and go to the junk shop. But now he uses one constantly in his private office and at the clinic. But this same patient had quite a degree of astigmatism that was quickly detected by the ophthalmometer, and had to be reckoned with in fitting her with glasses. Each one of these children was examined with this instrument, and the full measure of corneal astigmatism detected at once.

Whether it be sufficient to regard only corneal astigmatism, and accurately measure that, I shall not here stop to discuss. Suffice it to say that our best authorities the world over are more and more coming to so regard it, in the vast majority of cases. Not only with these 86 eyes just mentioned, but in the various other cases recorded in these statistics, with almost no exceptions, an astigmatic glass was accepted by the eye to the full measure indicated by the ophthalmometer. I am on record elsewhere as an admirer of the instrument to accomplish what it was designed to do, that is, to measure the amount and locate the axis of the corneal astigmatism. More than this it will not do, and more should not be expected of it. I have used one constantly from the time it was first introduced into the Manhattan Hospital, and procured one before they were manufactured in this country, so much did I feel the need of it in my private practice. It is for the quick and accurate detection of this corneal error, even in smallest degree, in these nearly perfect eyes, that it yields us one of its best aids. In the many thousand eyes that I have examined with it the story has always been told so truly and so well, that I now look upon it as a tried and trusted friend.

Some minor additions that I have made to my instrument, I am sure have been of service to me. have for a long time used it without the covering shield that is placed before the unobserved eye. cannot see that the instrument has lost anything in accuracy by this change, and it certainly expedites the examination very much if one is not obliged to leave his seat to move this from one eye to the other. This very change means also in most cases that the patient will remove his face from the opening and a readjustment of instrument is required.

The long pointer is not always readily seen, and the figures it indicates. To supplement both these I have duplicate figures placed at the edge of the opening on the back of the large plate. If the pointer is not seen, a glance at these figures at once tells me its location and the figures. Many times we wish to be as expeditious as possible in the examination, in case of young children, for example; and both these changes are of advantage. A "sight" placed over the distal end of the tube aids one not a little in "finding the eye," which is no small annoyance to beginners. A projecting visor of tin or brass, painted black on the inside, and two and a half inches deep at the centre, can be fitted to the top of the opening for the face. This shuts off overhead light, and letting it taper towards the sides it also shuts off the side lights. This puts the cornea in a dark space and so gives a sharper image of the white mires. The simpler we can make any instrument and yet lose nothing in accuracy the more acceptable will it become; and as it seems to be the order of the day to make suggestions regarding this one, every writer seems disposed to add his mite.

In Table II we find 10 children to add to the 86 eyes already discussed, who had simple hyperopic astigmatism, or a total of 106 eyes. These figures show how very common it is to find some degree of hyperopic astigmatism in young persons in good health doing a good deal of eye work, and the great majority of them not conscious of any defect, and none of them calling upon an oculist for relief, for one eye in 4.15 eyes is quite a large proportion for this one fault. It is greatly in excess of that shown by the cases noted in the next division, which is:

MYOPIC ASTIGMATISM. — In only 13 children do we find this trouble in both eyes, and in five in one eye only, or a total of 31 eyes, or one eye in 14.2 eyes; and whereas there were 86 eyes with perfect vision and yet some hyperopic astigmatism, not one of these 31 eyes comes within this class. It would seem that this error even in small degree is hardly compatible with 28 vision in an eye. And yet let two such eyes work in unison and a person may be able to reach this standard, but cover one eye and at once the other falls below the standard of perfection. Not so always with hyperopic astigmatism as we have seen.

SIMPLE MYOPIA. - Although this class ranks lowest in the scale of frequency in these statistics, for there were but 8 children, or 16 eyes, in the whole number, yet its great importance, both by itself and associated with astigmatism, advances it to first place in our care and solicitude for such eyes. An eye once myopic remains myopic always. Any considerable degree renders the eye dependent on a glass to secure Not one with this fault was perfect distant vision. found in the class with perfect vision. Not only in adults is much of our happiness dependent on seeing perfectly, but in children the unfolding and development of the mind are greatly influenced by the way they see the world; whether they see it well and clearly or through a mist and maze; whether with a good broad expanse of horizon, or a small and contracted one. To be sure, one eye in 27.5 eyes is not a high percentage, but it should be remembered that myopia, except in cases of high degree, is an acquired fault in the majority of cases. What is to-day practically a perfect eye in a child, may, in a few years, 45°.

pass over the line into a low grade of myopia, and this in time increase to a higher grade, and all come about by faults and mistakes in the use of the eyes; And what are these faults and mistakes? Close, confining study and work on small objects, and such work prolonged when the eye is tired and needs relaxation; too long hours at books under like conditions; poor light in study and reading, and reading at twilight is a common and pernicious practice; the habit of holding the book and work near the face; the study of imperfect maps and finding the names printed in very small type. These are some of the more common faults of school-children, and unfortunately, too, of many of the books placed in their hands for study. A certain percentage of these 120 children with perfect vision to-day, will become myopic before they are through their school and college days, provided they prolong their studies so far.

To quote again from the editorial at first referred to, it says: "In our colleges the percentage ranges from 35 in the Freshman to 47 in the Senior year. Among classes whose occupation does not tax the eyes the percentage of myopia is only two or three, and the average for a civilized community may be taken to be about eight per cent. Thus it seems that the population of a civilized country starts naturally with only about two per cent. of shortsightedness, and that this increases until among some classes every

other man is myopic."

In the line of prevention of this trouble much depends in the care taken of the eyes, avoiding the harmful practises above referred to; much depends on keeping up the full physical powers of the body; much on a good share of healthful out-door exercise and using the eyes in seeing distant objects in place of

prolonged close book-work.

ASTIGMATISM AGAINST THE RULE.— An eye that has myopic astigmatism requires the cylindric glass that corrects the error to stand horizontally before the eye; one with hyperopic astigmatism at right angles to this, or perpendicular. This is the rule, but when the myopic eye requires its glass to stand perpendicular, and the hyperopic takes it only horizontally, then we have "astigmatism against the rule." In proportion to the grade of trouble present this form of astigmatism produces more eye distress and constant discomfort than any other refraction fault, if I have observed correctly. I was not prepared to suppose that 1 eye in every 16.95 eyes among these children had this error, however. But there were 13 who had it in each eye, 8 girls and 5 boys. Of these 13 all but 2 gave a history of eye discomfort especially in their studies and all close work. Yet the grade of error was never more than 1.50 dioptrics, and nearly all from .50 to 1. dioptric. In 8 cases the vision was almost $\frac{20}{20}$, in 2 it was $\frac{20}{20}$, yet the ophthalmometer gave the key to the trouble at once, and in only two eyes was the glass indicated not accepted at once. Almost surely as these children grow older and begin to lose some of the great accommodative power of childhood will this error begin to become more troublesome, and relief and comfort can only be secured by wearing glasses constantly.

It was long ago determined that the axis of corneal astigmatism was either at 90° or 180°, in the vast majority of cases. I have noted but 7 departures in the right eye from this rule in the 440 eyes, 4 in the left, and 5 in both right and left, to the extent of 15° to

ASTHENOPIA.— How many of these 220 children confessed to some degree of eye trouble in their studies? This is an interesting and important question and 115 did confess to some of the various phases of asthenopia, while 105 said their eyes gave them no trouble, and of these latter no less than 30 had some astigmatism in one or both eyes, from 1 to 1.50 dioptrics. The statement of these children on such a question should be taken with due allowance, I feel sure, but still it is of some value.

POSITION IN THE TREATMENT OF ELBOW-JOINT FRACTURES: AN EXPERIMENTAL STUDY.1

BY H. L. SMITH, M.D.

(Concluded from No. 16, p. 389.)

T-FRACTURES.

Experiment, August 27, 1892. Adult female. Left arm. Rigor mortis very slight. Vertical incision, two centimetres above the internal condyle. A small bone drill passed partially through the condyle towards the joint. It stuck in the bone, and was withdrawn. The condyle was then partially chiselled through in the same direction. The elbow was then raised upon the edge of the table, with the forearm vertical, and repeated blows were made with a wooden mallet, the hand being extended, so that the blows might be made upon the palm in the direction of the forearm axis. A slight crack was heard, but nothing definite was accom-plished in this way. The forearm was then forcibly abducted over the edge of the table. Apparently the fibres of the posterior ligament attached to the olecranon were broken through. Attempts were now made to break the internal condyle by strong adduction, but they were not successful. It had been thought that a fracture brought about by direct or indirect force might present conditions nearer those found in the case of fresh breaks during life, but as it was so difficult to produce the fracture in the adult arm the chisel was resorted to again, and all the fractures of this series of experiments were produced in that way.

After being chiselled off, the internal condyle felt freely movable backward and forward, and seemed to be held firmly to the ulna. The olecranon could be partially displaced inward by flexion and abduction of the forearm.

In the extended position the fragment is pretty firmly locked, and seems to be in fairly good position. The "carrying angle" is normal, and the forearm cannot be brought into a straight line with the arm. A forcible attempt is made to bring the internal condyle far enough upward to make the angle an internal one, so as to produce the "gun-stock" deformity. This is accomplished by strongly adducting the forearm. As this act is performed, something is heard to break with a loud snap. The lateral mobility of the joint is now very free, and the elbow angle can be made a slightly internal one. The internal condyle still follows the ulna. When the joint is opened later, it is found that the first break went through the middle of the trochlea. The second line of fracture began in the centre of the first, ran across the bone at its thinnest part, and passed through the middle of the external condyle. It was observed that the outer fragment followed the head of the

The bones of the forearm, with the fragments, can be displaced backward upon the shaft of the humerus. By reducing the dislocation, and then putting the forearm in the extended position, the second, transverse, fracture seems to be brought into good position. The internal condyle is in fair position, but is quite movable, and seems to project slightly forward. The forearm can be easily hyperextended. With a few degrees of flexion (140°) the fragments are all

¹ Read before the Surgical Section of the Suffolk District Medical Society, January 3, 1894.

very loose, and could not be held in position easily, it would appear, by a simple anterior splint. The muscular masses which seemed before to aid in holding the parts

firmly are now quite loose.

In the position of right angles, with the hand supine, if downward pressure is made upon the upper part of the forearm, the second fracture is held in good position, but can be easily moved. In this position it is easy to get the backward displacement at the elbow, unless constant pressure and counter-pressure are made upon the broken portion — backward upon the shaft of the humerus, and forward by pulling the forearm. Upward pressure upon the upper end of the ulna, with the arm at right angles, forces the innerside of the arm, together with the internal condyle, upward. The ulna and radius are then brought into nearly the same horizontal plane. This appears to be done by the rotation of the lower fragment of the humerus, as a whole, upon the antero-posterior axis. With the hand in the semiprone position the two bones can be kept parallel, in their natural planes, and in their proper positions. In this case the fragments remain as before, being unaffected by the change in the position of the forearm.

If the dislocation is reduced, and then the forearm brought into the position of acute flexion, the fragments are kept in good position, and held more firmly than in any other position of the forearm; but if care is not taken, there is a tendency for the lower fragment of the humerus to rotate forward on its lateral axis. This tendency, how-

ever, is but slight.

The skin and fat are now removed, exposing the muscles. In the extended position, when the humero-ulnar angle is made as large as it is naturally, as shown by that of the sound arm, there is a separation of at least one centimetre between the upper edges of the line of fracture, due to the fact that the fragment is rotated outward, and prevented from coming into place by the structures which bind it to the ulna on the side. In order to bring the broken surfaces into position, the forearm must be adducted until it is in a

straight line with the upper arm.

In the right-angled position, with the hand supine, pressure upward upon the ulna brings the surfaces in contact, since the structures which bind the internal condyle to the ulna are now relaxed, and offer no resistance. Apparently it is the muscular masses, acting through the dense fibrous band to which they are attached, which form the main factor in this steadying of the fragment. If the hand is semi-pronated and at the same time downward pressure is made upon the ulna, the fragments are kept in normal position, and the "carrying angle" is preserved, as is shown by holding the fragment fixed with one hand while the forearm is slowly extended. With the hand semiprone, the bones can best be brought into the same plane, and therefore the danger of raising the ulna to the plane of the radius is not so great.

In the acute position the same conclusions are reached as before the removal of the skin. By constant downward pressure upon the ulna, the internal fragment is kept in position, and the normal angle between humerus and ulna

is found to be preserved.

A small knife is now introduced vertically into the muscular mass over the internal condyle, and all the ligaments uniting the condyle with the ulna divided as far as possible, leaving the muscular bellies and the fibrous septa as nearly intact as possible. The fragment is still found to follow all the movements of the ulna, because the intermuscular septum is attached to the ulna, and the only way to free the fragment would be to rupture this entirely through.

In the extended position the outward rolling is still more marked, and the separation greater than it was before. The fragment is now very loose, but it can be almost exactly replaced by bringing the arm into the position of acute flexion, forcing the ulna downward at the same time, and pressing the condyle firmly downward and backward.

The muscles are divided down to the capsule. In the extended position it is almost impossible to get the fragment in place by manipulation with the fingers; it persists in rolling outward. In the acute position the replacement can be done very easily and well. To accomplish it best, downward pressure should be made upon the forearm while the movement of flexion is being performed.

Undoubtedly the most unfortunate results after elbow-joint fractures occur from T-fractures, or those of greater comminution; and these cases have been studied with the greatest care, in order to be perfectly sure that the conclusions drawn are warranted by the facts. The foregoing is a typical fracture of this sort, the results obtained in the other experiments being identical. If it were possible to treat the living arm in a position of forced extension, the fragments might be held fairly well in position by the muscular bellies passing over them in front. But this is clearly impossible. The advocates of the extended position in the treatment of these injuries are careful to place the forearm at a point slightly less than full extension, and it is in exactly this position that the fragments were found to be most loosely held.

It is here, too, that the value of semi-pronation of the forearm is seen, since it was found in some of the experiments that the mere act of supination would carry the outer fragment distinctly away from its place, and the pressure such as is caused by the ordinary form of anterior angular splint would make this separation very considerable.

INTERNAL EPICONDYLE.

These fractures are of small consequence, and result favorably no matter what the position chosen. In no case were they produced purposely, but in two cases where the fractures resulted accidentally when it was intended to chip off more of the condyle, it was found that the fixation was more complete with the arm flexed to less than a right angle.

SPECIAL PROBLEMS.

Experiment, November 7, 1893. A variety of "T"fracture. To show whether, if the posterior ligament is divided, the tendon of the triceps alone is sufficient to bind

the fragments in place.

Large left arm. Chiselled over internal epicondyle. The epicondyle alone is at first broken off, and then by continuing the chiselling the joint is apparently opened. This is afterward found to be true, the line of fracture running nearly to the centre of the trochlea below. Then the external condyle is chiselled into the joint. The line of this fracture is afterward found to enter the first one at about the centre of the trochlea in front. It is therefore a kind of T-fracture.

In complete flexion the fragments are now held in place pretty firmly, although the internal epicondyle can be moved slightly. In all other positions the fragments can be easily moved with the movements of the forearm.

A knife blade is introduced above and behind the external condyle, and all the ligamentous fibres behind and over it are cut through, leaving only the tendon of the triceps. The fibres of the anconeus are all cut through.

The results do not differ from those obtained before, the

fragments being held in position just as well.

A window is cut through in front in order to see where the line of fracture runs. The same movements are again gone through with, with exactly the same results. Complete extension is now seen to separate the fragments in front a distance of at least half a centimetre. The locking force seems to be the coronoid process in front and the tendon of the triceps behind.

Experiment. To see if a fractured olecranon would allow of lateral mobility of the forearm, so as to modify the "carrying angle."

Large arm. Ligaments dry and stiff. Olecranon chiselled

urosis covering the posterior surface is not entirely broken through, so that the fractured extremity does not separate from the body of the bone on flexing forearm. There is considerable lateral mobility of the fragment, and crepitus easily obtained. No amount of lateral prying of the forearm will cause any appreciable difference in the angle. To make a difference in the angle, one of the lateral ligaments would have to be broken.

This study has slight bearing on the points at issue in this paper, and is inserted because of its importance in a complete study of the value of the carrying angle" and the cause and importance of its

Experiment, November 13, 1893. Medical School. To discover whether, with posterior and lateral ligaments divided, the triceps tendon remaining, the extended position is best.

Arm with muscles remaining. Chisel introduced above internal epicondyle, and the lower end of the humerus cut across. The line of fracture runs a little downward, but apparently passes above the capitellum. Without cutting the ligaments the forearm is first placed in various degrees of flexion. In the extended position the upper end of the lower fragment rides forward and presses firmly against the muscles in front of the joint. The fragment can be moved somewhat, although it is partially held, of course, by the dense tissues in front. In the right-angled position the fragment is quite loose, and can be moved in all directions pretty freely. In this position it is very easy to turn the fragment upon its long axis (the axis of the humerus), and apparently this would be done by bringing the arm across the chest, with the forearm in a sling, in the usual way. When the fragment is rotated in this way and then the forearm extended, it is evident that the "carrying angle" is decreased, but it is not made an internal angle. In this position if upward pressure is made beneath the upper end of the ulna, there is a tendency for the fragment to be bent one way or another at the point of fracture, the direction of the bending depending upon the direction of the force. If extension in the line of the humerus could be kept up in this position, the fragment would be kept pretty well in place.

In the scute position the fragment is held firmly in place at its upper end, although there is a tendency for its direction to be changed so that it points forward more than the shaft of the bone above. This change in direction is not very great, and even if union were to take place in that position the deformity would not be noticeable. This forward tilting can be almost entirely corrected by going through the manœuvre already described, and making strong downward traction. Rotation of the fragment in the axis of the humerus now takes place only if considerable force is used, since the rough edges of the broken sur-

faces become interlocked.

A T-fracture is now made of this specimen, and then the same test is repeated, with the same result, although the two fractured condyles are not held quite so tightly as was the single piece.

In this case the same study was made before the posterior ligament was cut and afterward, and the results were essentially alike. The posterior ligament was cut by introducing a knife blade behind, as is done in tenotomy, and then cutting backward until there was left only the tendon of the triceps, without its fibres running laterally to the condyles.

Experiment, November 14, 1893. Division of the following structures, successively: Internal condyle, lateral ligament, anterior ligament, external condyle, external lateral ligament, posterior ligament. The tendon of the triceps only is left.

Arm from dissecting room. Muscles intact. Internal condyle chiselled. The fracture enters trochles near its inner border. The fragment is best held in the acute posi-tion. Lateral ligament on that side divided. Now the through at about the junction of the epiphysis. The apone- | fragment is very movable in the extended position, and also

in the right-angled position, but in the acute position it is held apparently by the tenseness of the fibres running from the internal epicondyle. Just as soon as the ulna gets a little inside the right angle (at about 80°), the internal condyle commences to turn up into its place and become fixed.

Then the anterior ligament is cut, which leaves the condyle very free. In the extended position the fragment falls forward and outward, and will not remain in place. In the acute position it is brought up quite well into place,

and is held pretty firmly.

The external condyle is now cut through, the line of fracture running across the joint, into the first fracture, making a T-fracture. In the extended position everything is loose, and nothing is held in position, while in acute flexion things are held better than in any other way. With so much tissue lost it is, of course, impossible for the fragments to be kept exactly in place, and in other than the acute position there is no attempt at it apparently.

The posterior ligament is now divided, and there remains only the tendon of the triceps. In the extended position the front of the joint is absolutely open, the fragments rolling in every direction, and showing no tendency to keep in place, even after having been put together. As the forearm is flexed and gradually brought to an acute angle with the upper arm the separated condyles, without further manipulation, come very nearly into place. After being pressed into position with the hand they are held there very firmly. This is a very striking performance, and is repeated over and over again, but uniformly with the same result.

Any conclusions drawn from the preceding experiments must be made with certain reservations, due chiefly to the difference in the conditions as met with in the cadaver and the recently injured arm. It is quite impossible to say, for instance, that the fracture caused by a chisel, where there is generally no comminution, where the line of fracture is comparatively a straight one, and where there is usually little or no rupture of ligaments or stripping up of the periosteum, will behave like a recent fracture in the living arm, where all these conditions may easily be quite the opposite, and where, moreover, there is synovial effusion, extravasation of blood, and spasm of torn and irritated muscles.

Such or similar limitations, however, are common to all purely experimental work, and if given proper weight, do not prevent us from making valuable deductions.

The following conclusions seem to be justified:

(1) When either condyle of the humerus is broken off into the joint, the fragment remains closely attached to the bone below, whose motions it follows.

(2) The fragment of a fractured condyle can be most surely replaced in its normal position by the following manœuvre: forcible extension followed by pressure on upper end of ulna, downward and forward, while the forearm is being pronated and flexed to an acute angle with the upper arm.

(8) The same manœuvre acts equally well in replacing the fragments if the fracture be of both condyles, a transverse fracture of the lower end of the humerus (probably it would be true also of the epiphyseal sep-

aration), or a T-fracture.

(4) In all these fractures involving the joint the fragments are held most firmly in place, that is, are least susceptible to displacement from forces acting from without, if the elbow is tightly flexed. The next best position, in this regard, is the position of forced extension (not loose extension), while the greatest mobility is met with in the position of 100° of flexion.

- (5) Forced extension in all cases causes a rotation of the fragment forward. A less degree of extension, which will not do this, allows the fragment great freedom of motion.
- (6) The essential factors in the locking of the fragments in the acute position, seem to be the coronoid process in front and the ligamentous and muscular structures behind. The tendon of the triceps is sufficient if the posterior ligament is divided, and the ligament is sufficient if the muscle is removed.

However pleasing these experiments may be in the simplicity and definiteness of their results, it is natural that some question should arise as to their application in practice. The treatment of elbow injuries by flexion to a point slightly less than a right angle is not new. But the present scheme contemplates a flexion which shall purposely make tense the structures behind the articulation, a position which it would seem, might easily be carried so far as to endanger the tissues in front of the joint and cut off the blood-supply of the forearm. Again, it might be thought that such a position would be exceedingly painful, or at least irksome, to the patient.

In the cases thus far observed, however, no unpleasant symptoms have been met with. In but one case was it necessary to change the angle, and that was for a single day only. Pain, or even discomfort, has not been complained of, nor has there been any kind of disturbance in the circulation of the forearm.

If the conditions of the experimental fracture are realized in actual practice, and the fragments are held in almost exact position, and kept there absolutely without motion, then it may reasonably be expected, from the general principles governing the repair of bones, that there will be a minimum of exudate, a minimum of callus-building, union practically by first intention, the least possible thickening of ligaments and formation of adhesions, and the smallest amount of extra bone-formation; or, in other words, the quickest possible repair, with the least impairment of function.

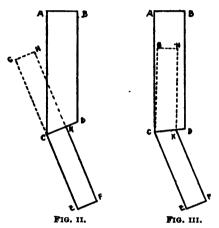
Next in importance to the preservation of the mobility of the joint is the desirability of maintaining the normal angle between the humerus and ulna. The exact value of this angle, in a practical way, may be a question worthy of separate consideration. It is certainly true that not a few surgeons deem it of sufficient importance to serve as a basis for a special method of treatment, preferring apparently, to run the risk of anchylosis with the forearm extended, than to run the chance of an unnatural inward angle.

Any position which restores the parts exactly to their proper places cannot fail to preserve the normal angularity. Aside from this assumption, however, there is reason to believe, on theoretical grounds, that as long as the ulna is closely flexed on the humerus it is impossible for such a displacement of the fragments to occur as to reverse the usual humero-ulnar angle. It is generally stated that this angle is due to the obliquity of the axis of the joint to the axis of the humerus. As a matter of fact, it is due in a larger degree to the obliquity of the axis of the ulna to the axis of the joint.

Strangely enough this fact seems to have escaped the attention of anatomists and surgeons. The writer has made careful measurements in a large number of bones and of freehly dissected arms, the results of which it is proposed to collate and publish later. It is the more curious that attention has not been directed to this point because a great deal of study has been devoted to the curious mechanism and motious of the joint, and this simple relation of the

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If the humero-ulnar angle (the so-called "carrying angle") were due, as is usually stated, to the obliquity of the axis of the joint to the axis of the humerus, then in flexion of the forearm the latter would be carried to the inner side of the arm, as in the diagram. (Fig. 2.) But this is not the case. The obliquity existing in both bones, though not usually to an equal degree, the forearm when acutely flexed, lies nearly in the plane (antero-posterior) of the arm. (Fig. 3.) No matter, then, what the fracture may be, if, the forearm being acutely flexed, the humerus and ulna are kept in this same plane during treatment, when the forearm is extended, the ulna will be carried outward, reproducing very closely, at least, the normal angle.



As long as the lateral ligaments are untorn, it is not possible for either condyle to be so displaced upward as to change the direction of the axis of motion in the joint to such an extent as to overcome this natural inclination of the ulna outward. In the case of a transverse fracture across the lower end of the humerus, or of a T-fracture, it is perhaps possible for this to occur, but even then it would be unlikely unless the forearm bones were flexed to less than an acute angle, that is, to a point somewhere between 90° and 60°.

At the time the foregoing paper was read in January, 1894, there were reported ten cases in which elbow injuries of various kinds had been treated by acute flexion. The results obtained in these cases were so satisfactory, that since that time the majority of injuries of this class occurring at the City Hospital have been so treated, and the writer is not aware of any case in which the result has been other than satisfactory. As it is intended to collect and study all these cases more carefully in the future, they will not be printed here. Since some of them, however, were carefully manipulated under ether, with a view to test the correctness of the results obtained in the experimental fractures, the following notes, made at the time of the examination, and confirmed by other observers, are subjoined.

CASE. Fracture of internal condyle.

C. O'L., a large boy of sixteen, fell on the ice December 27, 1893, striking on the left elbow. A temporary dressing was applied at the New England Hospital, and he came to the City Hospital on the morning of the 28th. Under

shaft of the ulua to its articular axis, really furnishes a key to the mechanism, rendering much more simple a matter which otherwise seems very obscure.

ether there was found to be a fracture of the internal condyle running well into the joint. There was slight swelling, and the detection and study of the fracture was exceptionally satisfactory. Crepitus was best obtained by alternately flexing and extending the forearm, at the same time making downward pressure upon the internal epicondyle. The humero-ulnar angle of the right arm was estimated to be eight degrees. By adduction of the forearm that of the left elbow could be reduced to nothing, while by abduction it could be increased to ten degrees or more. When adduction was made, the fragment was carried forward and upward. Reduction was accomplished in the manner heretofore described, and tracings taken before and after the manipulation showed conclusively that the position was improved. The forearm was held at 45° of flexion by adhesive plaster.

When the forearm was extended, the fragment could be felt to bulge forward beneath the skin, and it was noted that in this position, as well as when the elbow was at right

angles, the fragment could be easily displaced.

CASE. Separation of epiphysis. Acute flexion. Slight

internal angle.

M. D., a girl of twenty months, November 12, 1893, fell down a flight of stairs. She entered the service of Dr. M. F. Gavin, by whose kindness I am allowed to report the case. I saw her four hours after the injury, at which time there was great swelling of the left elbow region, with commencing ecchymosis on the outer aspect of the joint. Careful examination under ether disclosed a transverse fracture of the lower end of the humerus, the line of fracture seeming to be at the epiphyseal junction on the outer side, while on the inner side it ran higher up through the bony structure above the internal epicondyle. At first the forearm could be flexed only to a right angle, but after some manipulation full flexion was possible. On extending the forearm it was found to be adducted, in relation to the humerus, the two forming an inwardly open angle of about ten degrees. It was easy to increase the amount of adduction and with it, of course, this inward angle. In the normal arm the humero-ulnar angle was nothing, the arm and the forearm being in the same straight line. After going through the motion of reduction in the manner already explained, and then carefully extending the forearm, without disturbing the fragment, the inward angle was found to have disappeared, the arm and forearm being in one straight line.

By experimenting it was found that if the arm was fully extended, the fragment was easily moved out of position and tended to project forward. In the right-angled position the same thing was true, while in the acute position the fragment seemed locked, and in very fair position, although the internal epicondyle did not seem to be as prominent as upon the other side. By no amount of manipulation, however, and in no position could the epicondyle be made any more prominent.

The forearm was put up at about 60° with adhesive plaster. The radial artery could be felt to pulsate, and there was no lividity of the fingers. Tracings were taken before and after the reduction, and it was evident that the

position had been improved.

December 7th, about four weeks after the injury, the strapping was omitted, and the arm left free, there having been no trouble whatever from pain or pressure in the mean time. December 28th, six and a half weeks after injury, flexion, rotation and extension were absolutely perfect. There was a very slight internal angle at the elbow (three to five degrees). The bony prominences were practically in their normal relative positions, and the child could use the arm almost perfectly.

This appears to have offered one of the severest tests possible. The writer is very firmly convinced from a series of studies which he hopes to publish later, that it is in exactly this class of fractures, namely, separation of the epiphysis, that the peculiar gun-stock deformity is most often met with. In the above case the deformity is trifling, and the return of function all that could be wished.

Clinical Department.

A CASE OF DIABETES INSIPIDUS.

BY SAMUEL A. FISK, A.M., M.D., DENVER, COL.

In the Journal for July 31, 1884, I reported a case of diabetes insipidus, somewhat in detail; and as the case has been under constant observation, and ten years have elapsed, it has occurred to me that it might be of interest to make a further report of the conditions and institute some comparisons.

The history, as given at the time, was that of a man twenty-eight years old, who had been fairly healthy, although he was never robust. At five years of age he was attacked with congestion of the lungs. At fourteen, he was taken with acute inflammatory rheumatism, which lasted ten days or two weeks. twenty-two, he had a pneumonic process at the base of the right lung. At twenty-four, he was sick in bed for four weeks with lobular pneumonia, sweats, loss of flesh and strength, and accompanying symptoms. This trouble brought him to Colorado in 1880; and in the latter part of October, 1883, when he was twenty-eight years of age, he was attacked with acute inflammatory rheumatism, which, with a relapse, lasted six weeks, during the greater part of which time he was confined to his bed. The joints affected were the knees. The treatment was the salicylate of soda, five grains every three hours; later the acetate of potassium, twenty grains three times a day, was added; and still later he was given ten grains of salicin every three hours, and the knees were painted with cantharidal collodion.

Synchronously with the onset of rheumatism the patient suffered from excessive thirst and a craving for the alkaline waters, such as Vichy. The artesian water tasted as though it were sweetened with molasses. The total ingestion of fluid was about ten quarts a day, two of these being Vichy and the Iron Ute water. The daily secretion of urine was from nine to ten quarts. Analysis showed it to be pale in color. slightly acid it reaction, specific gravity 1.003, albumin and sugar absent.

Stress was laid, at the time of making the report, upon the extraordinary thirst. The tongue and fauces would be parched and dry immediately after drinking. The skin became furfuraceous, the fingers puckered and so horny that the epidermis could be cut off as though from a corn. The delicacy of the sense of touch was impaired, and for weeks there was no moisture apparent in the body; in fact, it was impossible to pro-Every once in a while a prickling, duce sweating. itching sensation would be felt in the skin, especially in the small of the back and on the inner sides of the thighs. The emaciation produced by the rheumatism was marked, and there was, of course, great loss of strength. Convalescence was slow, and during it the polydipsia and hyduria continued. Water was the more palatable for being iced, and the urine had to be voided nearly every hour. If the time ran to an hour physical defect consequent upon it. He still drinks a and a half the discomfort was extreme. The secretion good deal of water, preferring the carbonated, Vichy during the sleeping hours was from 3,000 to 4,000 cubic centimetres, requiring the patient to get out of bed about six times during the night for the sake of emptying his bladder. It was also observed that intense mental application or any nervous excitement increased the activity of the secretion of urine.

Three of the patient's uncles, on his father's side, died of diabetes mellitus, and his own parents each died in middle life of valvular lesion of the heart.

Various remedies, like quinine and iron, fluid extract of ergot, valerianate of zinc, nitric acid, nux vomica, etc., were tried without affording any particular relief, though, since the report was made, no treatment has been used with special reference to the condition. The patient has been active, bearing his full share of the burdens of life, and has had several intercurrent affections. He has had three or four exacerbations of his pulmonary condition and one attack of croupous pneumonia; once since then he has been confined to bed for several weeks with acute inflammatory rheumatism; he suffered a spontaneous fracture of the rib, due to a severe, expulsive cough; but in the main he has enjoyed health and strength.

By way of comparison I introduce his condition, as tabulated in the last report and at the present time:

April 23, 1884. Age, 28. Weight, 147½ lbs. Amount, 9,000 c. c.; specific gravity, 1.003; pale; urea, 38.96 grms.; phosphates, 2.4 grms.; sulphates, 24.7 grms.

May 11, 1894. Age, 38. Weight, 168½ lbs. Amount, 7,560 c. c.; specific gravity, 1.004; pale; urea, 28.3 grms.; phosphates, 2.1 grms.; sulphates, 27.2.

Chlorides at present: NaCl 22.72 grms; albumin, a very slight trace; sugar absent; uropheine, considerably diminished; indican, much diminished, almost nil; a few bladder cells. Nothing else found in test-Picric acid gave decided reaction. ing for albumin. Precipitate increased on boiling. Acidulating the urine with acetic acid and boiling gave a good test, the precipitate persisting after adding more acetic acid. Boiling and then acidulating with nitric acid gave a good test, as also did ferrocyanide of potassium. Cold nitric acid gave no reaction. The amount of albumin was too small to quantitate. Sugar was sought by Trommer's, Fehling's, the picric-acid test and by Brücke's lead process. It is probable that the uropheine and indican would have been nearly normal if the amount excreted daily were contained in the amount of urine usually passed by other people.

For the above analysis I am indebted to Dr. C. D. Nelson, a recent graduate of the Harvard Medical School.

From the above report it will be seen that the amount of urea excreted is normal; the phosphates and sulphates somewhat diminished, while the chlorides are considerably increased, probably due to the fact that the patient is fond of salt and takes considerable of it in the twenty-four hours. I hardly think much emphasis should be put upon the trace of albumin, as it was only a trace and too small to quantitate.

It is interesting to note that the daily excretion of urine and ingestion of fluid remains about the same as at the time of making the earlier report. The patient's general condition has improved greatly, as indicated somewhat by his increase in weight. He has good endurance and, beyond the inconvenience experienced in consequence of his affliction, is unconscious of any and like waters, and still suffers great inconvenience from the necessity for emptying his bladder frequently, although, in this respect he is much improved. He is now aroused at night only three or four times as against six or eight times at the previous report, and, at present, he can go for three or four hours during

the day. The condition of his skin is improved; it is not nearly so dry and horny, and he perspires much more easily and actively than he formerly did. thirst is still annoying, but in every respect he is vastly improved, and in the eyes of most people is regarded as a picture of health.

With reference to medication, as has been remarked before, of late years nothing has been done. treatment has been found to be of more avail than any other line. He has not limited himself with reference to the ingestion of water and has drunk freely as inclination might prompt, especially of the carbonated waters. At the end of ten years I am able to report that the progress has been favorable and that little, if any, physical infirmity has been induced by the affection, although the inconvenience has been most annoying.

A CASE OF MELENA NEONATORUM, AND A CASE OF HYSTERO-EPILEPSY IN A MAN.

BY JAMES B. THORNTON, M.D., BOSTON,

On April 24th, at 7 P. M. I was called to attend Mrs. J. F. B. in confinement. Labor was uneventful: at 1.30 A. M. mother was delivered of a well-formed, healthy female child, the third stage of labor presenting nothing out of the common. I returned to my office at 2.15, leaving mother and infant in good condition.

At 4.30 the same morning I was hastily summoned, the messenger saying that "the baby was bleeding to death." Presuming that in some way the ligature about the cord had slipped, I hastened to my patient's bedside and found a very frightened mother, and a healthy, rosy, kicking baby without any evidence of exsanguination. However, on the nurse's removing the napkins, I was surprised to find that that next to the skin was almost full of blood. In my opinion there were fully four ounces.

The nurse stated that she was attracted to the child by a sudden movement on its part not unlike a mild convulsive seizure and she found the blood pouring from the anus. On lifting the child up, the flow suddenly ceased and there had been no further hemorrhage up to the time of my arrival - or since.

As I stated above, on examination, one would not know that anything unusual had occurred to the child.

Melena neonatorum is a condition or variety of intestinal hemorrhage rarely met with and the etiology of the affection is involved in obscurity. In Whittaker's references to it he quotes as causes, ulceration of stemach or duodenum (Bohn), embolism (Landau), fatty degenerations (Steiner), premature ligation of cord (Kiwisch). Betz and Trousseau have both seen a case in a family subject to hemophilia. advances the opinion that micro-organisms due to concealed septic absorption may act as a cause, and the writer humbly agrees with the last-quoted authority, that it would be unfair not to give these pathological Brownies a hearing even in this obscure affection.

My case presents special interest, as it is exceedingly rare for the patient to emerge wholly unscathed from so severe an ordeal.

On July 20th at 4.45 P. M., I was called to see a man who, according to the statement of the messenthing he did not do by the w ger, "had fallen in a fit." On my arrival I found my ward found him on the street. patient was a fairly robust-looking fellow of about Next morning I saw him before he was up and

thirty-six or thirty-eight years of age. I had the man removed from the floor where he had fallen, to a table, and after a brief examination was able to elicit the following information from the bystanders: That my patient had been in the immediate neighborhood during most of the day, and had been feeling as well as usual so far as was known; had drank two or three glasses of beer since morning and in the afternoon attended a ball game; had returned to his friends later and after sitting awhile, suddenly complained of feeling dizzy and fell to the floor, where he had lain until I reached his side.

By careful examination with such aid as I could derive from the above-stated facts, I was able to eliminate heat-stroke, syncope, poisoning, uremic coma, alcoholism and epilepsy, such elimination leaving only cerebral hemorrhage and something else which at the time did not occur to me.

With intracranial hemorrhage, however, as a diagnosis, I was not satisfied, but after vaiuly trying to arouse my patient for more than an hour, I was obliged to rest upon this as a cause for his condition and made arrangements for his removal to the City Hospital.

Just before the arrival of the ambulance the patient suddenly partially aroused and muttered a few words incoherently, but as at that moment the stretcher was brought in, I had no opportunity to further watch the case at that time; Dr. Nichols afterwards telephoning me that on his arrival at the hospital he was clearheaded in a great measure and after thirty-six hours' stay was discharged at his own request, his discharge paper being marked "Relieved."

On July 25th I was hastily summoned, much in the same way as before, to another street, to see "a man in a fit." To my surprise and pleasure (professional), I found my patient to be the same man whom I had seen on the 20th, as detailed above, and in identically the same state.

I had no sooner entered the room than it flashed upon me that I had to deal with a case of hysteroepilepsy or catalepsy. I first satisfied myself that the man was completely unconscious, by rubbing my fingers over the staring eyeballs and thrusting a needle beneath the finger-nail to the approximal extremity of the matrix - all without any evidence of sensation. I then lifted one of the legs so that it pointed to the corner of the ceiling, and, on removing my hands, it placidly remained in that position; its fellow then was aimed in an opposite direction and it was equally obedient.

I then turned my attention to the upper extremities and found that whatever positions the joints were capable of, were maintained at my will.

Looking about to make some remark to the spectators of this strange condition, I found I was alone with my patient, they having regarded me as possessing some unheard of power which it would not be safe for them to come under the influence of, lest like Lot's wife and my patient, they might be obliged to assume such poses as might please my fancy.

Finally, however, I was able to reassure them that they were in no danger nor was the sick ("bewitched") man, and instructed them to have him remain in bed. after regaining consciousness, until my next visit thing he did not do by the way, as two hours after-

made a thorough and careful examination of his case and previous history and that of his family, and from it all could I gain but one significant point, and that was, that he had a brother a few years his senior who had had two "shocks" and was then lying in a semiparalyzed condition.

His own health was good in every respect and he denied any venereal taint or the possession of any bad

habits.

He stated that he never before had had any such illness nor had he been sick in any way with one exception — and that may be the key to the matter; some years ago while in bathing at Coney Island, he had attempted to take a header through a rapidly approaching wave and the force of the blow rendered him unconscious, so that he was removed to a hospital where he was ill some days, but since his discharge had never suffered any inconvenience from his injury. Certainly if this be an etiological factor in the attacks I have detailed, we shall hear from him in the future.

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY.

COUNCILLORS' MEETING.

A STATED meeting was held at the Medical Library, Boston, on Wednesday, October 3, 1894. The meeting was called to order at 11 A. M., the President, Dr. F. K. Paddock, in the chair. One hundred and eight Councillors were present.

The following were appointed delegates to other

State Medical Societies:

Vermont. — Drs. C. Seymour, Northampton; O. J. Brown, North Adams. New York. — Drs. W. W. Leavitt, Pittsfield; W. W. Scofield, Dalton. New York State Medical Association. — Drs. J. B. Ayer, E. M. Buckingham, Boston.

The CHAIR announced that in accordance with the vote at the last meeting he had appointed the following to constitute, with the President, the Committee on State and National Legislation: Drs. H. P. Walcott, H. P. Bowditch, T. H. Gage, S. D. Presbrey.

In accordance with the recommendation of the Committee on Publications, it was voted that the hour of the annual meeting of the Councillors be changed to 7 P. M., and that of the Shattuck Lecture to 1 P. M., on the day preceding the annual meeting of the Society.

On motion of Dr. Forster, the following amendments to By-Laws VI and VII were adopted:

By-Law VI, strike out lines 11 to 18 on page 11, namely.

Any Fellow removing out of the State may have liberty to retain his Fellowship so long, and only so long, as he punctually pays the annual assessment.

Also, in lines 14 and 15, strike out the words "lost his Fellowship by removal from the State," and substitute therefor the words, "been dropped from the Roll of Fellows by a vote of the Councillors," so that the By-Law shall read.

VI. Any Fellow, whose dues have been paid or remitted, may, on written application and for satisfactory reasons, first examined and reported upon by a Committee, be allowed to resign Fellowship and to withdraw from the Society by a vote of the Councillors.

Any one who has retired or resigned, or been dropped from the Roll of Fellows by a vote of the Councillors, may, on application in writing, be restored to full Fellowship by the vote of the Councillors at any Stated Meeting.

By-Law VII, strike out the word "five" in line 19, page 11, and substitute therefor the word "three." The first paragraph will then read.

VII. Any Fellow who has not paid an assessment to the Society for three consecutive years, and who, after due notification of his delinquency, neglects, or declines, without sufficient excuse, to pay his dues, may, on report of the Committee on Membership and Resignations, be dropped from the Roll of Fellows by a vote of the Councillors.

Dr. Forster also offered the following amendment to By-Law XVII:

Strike out the word "eight" in line 30, page 14, and substitute therefor the word "twelve." The By-Law will then read.

XVII. Councillors shall be chosen by the District Societies, as directed in By-Law XIII; each Society choosing, from among the Fellows residing within its District, in the proportion of one Councillor to every twelve Fellows, as nearly as may be.

After discussion, it was voted that a committee of one from each District Society be appointed by the Chair to consider the amendment to By-Law XVII, and to report thereon at the next meeting of the Council.

The following were appointed to constitute the committee: Barnstable, B. D. Gifford; Berkshire, L. D. Woodbridge; Bristol North, W. S. Robinson; Bristol South, F. A. Sawyer; Essex North, F. A. Howe; Essex South, J. G. Pinkham; Franklin, A. C. Deane; Hampden, G. S. Stebbins; Hampshire, Jas. Dunlap; Middlesex East, J. S. Clark; Middlesex North, F. W. Chadbourne; Middlesex South, Walter Ela; Norfolk, J. S. Greene; Norfolk South, J. W. Spooner; Plymouth, A. E. Paine; Suffolk, J. C. White (Chairman); Worcester, T. H. Gage; Worcester North, E. J. Cutter.

An adjourned meeting of the SOCIETY was held at the Medical Library, Boston, on Wednesday, October 3, 1894, at 1 o'clock P. M., the President, Dr. F. K. PADDOCK, in the chair.

Voted, That the Society concur with the Council in the following amendments to the By-Laws:

By-Law I to be changed by striking out part of line 21 on page 9, and the lines 22 and 26 inclusive, and substituting the following words, so that the By-Law shall read, "and by such further examination as the Censors shall deem expedient."

By-Law XIII to be changed by omitting the words "five Censors," in line 22, and adding in line 23 the words "five Censors, all of whom shall have been Fellows of the State Society for at least ten years, one of whom shall be also a Councillor, and be designated a Supervisor, and ex-officio Chairman of the Board of Censors."

By-Law XIX to be changed by adding after the word "held," in line 19, the words "they shall appoint the time and place of the annual meeting of the Supervisors."

After the title "Censors," commence By-Law XX with the following additional provisions relating to Supervisors:

The Censors, elected Supervisors, shall form a

They shall elect their own Chairman.

The Recording Secretary of the State Society shall be their Secretary.

For the transaction of business ten Supervisors shall

constitute a quorum.

They shall hold an annual meeting at such time and place as the Council shall direct; and may hold other meetings at such places and times as they may agree to appoint.

At their annual meeting, or adjournments thereof, the Supervisors shall formulate and adopt a uniform plan, consistent with the requirements of the By-Laws, to be pursued the ensuing year, by each District Board of Censors, in the examination of candidates.

They may authorize the Secretary to have printed, at the expense of the Society, all blanks and examination papers necessary to carry out their plans.

The Secretary shall furnish examination papers to Supervisors only, and in such number as each may,

in writing, request.

It shall be the duty of each Supervisor to convey to the Board of Censors of the District Society to which he belongs, together with the necessary examination papers, a report of the method and spirit in which the Board of Supervisors have directed that their plan should be used, and to see that in all examinations the

designated details are properly executed.

Should a candidate otherwise qualified, but without a diploma from one of the schools accredited by this Society, satisfy the Censors of the District Society where he resides, by examination, that he has received an education equivalent to that prescribed by the By-Laws of this Society, the Supervisor of said District Society shall present the name, standing and qualifications of said candidate, to the full Board of Supervisors at their next meeting, whereupon the assenting votes of two-thirds of the Supervisors present and voting, shall elect such a candidate to be a Fellow of this Society.

By-Law XX to be changed by adding after the word "By-Laws" in line 2, the following, so that the By-Law shall read: "The Censors shall examine, according to the rules and By-Laws, and in conformity with the directions of the Supervisors," such candidates, etc.; also after the word "day," in line 21, by adding the following, "but not at the same hour or

By-Law XXI to be changed by substituting the word "supervising," for the word "senior," so that this By-Law shall read, "and the supervising Censor shall preside."

By-Law XIX to be amended by omitting the words: "And an Anniversary Chairman, whose duty it shall be to act as Chairman of the Committee of Arrangements and to preside at the annual dinner for said year' and by the omission of the words: "the Anniversary Chairman, or of " in the second paragraph of the same | Sylvester and Marshall Hall methods. By-Law.

Also in the amendments of By-Laws VI and VII reported above in the proceedings of the Councillors' meeting.

A Course of Ten Lectures on the History OF MEDICINE is being given in the Medical Department of the University of Buffalo by Dr. Rosewell Park. They are open to the public and touch upon the various political, religious, philosophical and social questions which have influenced medical progress.

NEW YORK COUNTY MEDICAL ASSOCIATION.

STATED MEETING, October 15, 1894, the President, Dr. S. B. W. McLEOD, in the chair.

PROF. H. A. HARR, of Philadelphia, read, by invitation, a paper on the three following topics:

POSTURE IN ANESTHESIA ACCIDENTS. THE USE OF SEDATIVES IN HEART-DISEASE.

THE EFFICACY OF ICHTHYOL ON INFLAMED TISSUES.

In regard to anesthesia accidents he said that it was universally conceded that, after administering circulating stimulants, artificial respiration should always be resorted to as the most efficient means of resuscitation. Artificial respiration, however, would prove of little service if the head and neck of the patient were not in the proper position. He then proceeded to give a résumé of the researches and conclusions of Howard, of London, and stated that he (Dr. Hare) differed from the latter on some points. Howard's teachings in reference to the epiglottis were: first, that the epiglottis is apt to fall backward and close the glottis; second, that traction upon the tongue cannot raise the epiglottis; and, third, that the epiglottis can only be raised by raising the head and neck. In regard to traction upon the tongue Dr. Hare said that this could be most efficiently made by means of a tenaculum inserted near the root of the tongue, and the latter should be pulled forward in the direction of the upper In these cases the tongue was more frequently at fault than anything else, and it was a very common practice to grasp it and pull it down over the lower incisors.

Having discussed Howard's method for raising the glottis, he stated that extension as advocated by him was not practically valuable and that by the constriction of the parts it prevented all ingress of air through the mouth, the nostrils being solely depended upon for this purpose. If, however, the head, after the neck had been extended with the hands of the operator under the angles of the jaws, were projected forward the epiglottis could always be made to rise. He then gave a demonstration of this fact on a cadaver which had been prepared by the removal of the upper part of the cranium and the brain, and by the clipping away of the basilar process. Through the opening thus made the epiglottis could be distinctly seen to rise whenever the manipulation described was made. brief, then, the head should always be extended and tilted forward before proceeding to practise artificial respiration.

Having again emphasized the great value of this procedure, and having referred to the various methods of performing it, he said that he had made a series of experiments to determine the relative value of the In one series of experiments the volume of air entering the lungs by the Sylvester method was represented by the figure 62 and that by the Marshall Hall method by the figure 22.

In another series of experiments the figures were respectively 18 and 18. The very great superiority of the Sylvestor method, now so generally conceded, was thus demonstrated anew. In practising the Sylvester method there was one point of great practical importance that should never be lost sight of, namely, that the feet should always be held firmly in position by an assistant. Otherwise, a great part of the efficiency of the artificial respiration would be destroyed.

In speaking of chloroform narcosis, he said that this agent acts mainly on the respiratory centres and the medulla. Death was generally due to respiratory failure, and whenever chloroform was administered it was therefore of the utmost importance that the character of the respiration should be carefully As long as the respiratory function was carried on satisfactorily the patient was ordinarily free from danger. Of course, where there was cardiac disease any powerful drug might produce a fatal result, and the heart that could perform its functions with comparative safety under ordinary conditions might suddenly fail if chloroform were given, and an unusual call be thus made upon its impaired powers. Williams had demonstrated the fact that in chloroform inhalation there is always cardiac dilatation from the very start. In conclusion, Dr. Hare said that a considerably greater amount of chloroform could be given if atropine were administered than if it were not; as this drug by its vaso-motor influence had the effect of stimulating the respiration.

THE USE OF SEDATIVES IN HEART DISEASE.

There were drugs, he said, which were entirely different from digitalis and the other ordinary cardiac stimulants which could often be used with very happy effect. He then stated that he was accustomed to depend upon aconite, veratrum viride, and gelsemium. It was the common belief that in almost all heart troubles a stimulant was required, but he believed that this opinion was erroneous. Many gave nitro-glycerine under the impression that it was a stimulant, while in reality its action was sedative. He could not doubt that the use of digitalis was greatly abused by the great mass of practitioners. He then related two illustrative cases in his practice. In the first, in which there was edema and marked digestive trouble he gave digitalis with nux vomica, and in the other, in which there was no edema but a good deal of palpitation, he gave aconite. In both instances the most complete relief was afforded. In the first the heart was weak and needed aid, and in the second the heart was strong, but with irregular actiou.

There was a third class of cases in which such a sedative as aconite, and not digitalis. was required. This was where there was excessive hypertrophy, and it was commonly met with in those who after engaging in a life where extreme muscular activity is called for devoted themselves to quieter avocations. The compensating hypertrophy then became excessive. had frequently observed this condition of affairs in medical students who during their previous collegiate course had devoted themselves assiduously to athletics. In their less active life the heart became irregular in its action and palpitation was frequent on going up stairs, etc. In these cases the fluid extract of aconite in doses of one or two minims acted most satisfactorily. Rest in bed, however, was a necessary adjunct of the treatment. In cases of this kind the hearts were too large and with too powerful action for the work required of them in the changed conditions of life in which the patients were placed. Next to aconite as a heart sedative he ranked gelsemium, and in the third place esteemed veratrum viride.

THE EFFICACY OF ICHTHYOL ON INFLAMED TISSUES.

From a series of experiments, made by him, the de-

conclusion that the confidence now felt in this drug was well placed. In the experiments referred to it was applied in various combinations and ways, and it was shown that its efficacy was not increased by the addition of lanolin, but was materially augmented by rubbing.

An extended discussion followed the reading of the paper, opened by Dr. E. K. Dunham, who stated that since he learned the title of Professor Hare's third subject he had made a short series of experiments to determine the germicidal value of ichthyol. From these he found that while it had a slight inhibitory action on the growth of micro-organisms, it was not to be compared in this respect with a number of other agents. He presented several cultures for the inspection of the members.

Among those who took part in the discussion was Dr. C. A. LEALE, who in the course of his remarks mentioned that in his hands artificial respiration had been the means of prolonging the life of President Lincoln for a number of hours after he had been shot.

DR. T. H. MANLEY said that he had never met with but one fatal result from the use of anesthetics, and that in this instance it was caused by chloroform. Every precaution was taken in its administration, but death came in the most frightfully sudden manner. The respiration stopped all at once, although the heart kept beating for a time, and all efforts to resuscitate the patient proved fruitless. His impression was that any one who under ordinary circumstances made use of chloroform as an anesthetic undertook an unnecessary risk.

DR. McKeeby stated that for three years he was in the hospital service of Professor Chisolm, of Baltimore, and that he had given chloroform, or seen it given, in thousand of cases, without a single fatal result. In only one instance was there any serious trouble, and in this Dr. Chisolm promptly directed that the table should be tilted so that the head was lowered and the feet elevated. The patient was quickly restored, and the administration of the chloroform was continued. Two or three times during the operation it became necessary to repeat this manœuvre, but the operation was satisfactorily completed and the patient made a good recovery. It was Dr. Chisolm's routine practice, he said, to give a dose of whiskey in all cases before commencing the inhalation of chloroform.

In closing the discussion, Dr. HARE spoke upon a number of points that were brought up by the various speakers. In regard to traction upon the tongue he said that it did not make very much difference whether the tongue touched the upper or lower incisors; but it was important that the traction should be made on the root of the tongue and that it should be pulled forward and upward. The use of a tenaculum was not essential, but it would generally be found most convenient. The case of President Lincoln, referred to by Dr. Leale, was of very great interest as showing failure of respiration in surgical shock. In his paper he said he had purposely avoided touching upon the controversy as to the relative safety of ether and chloroform. Before entering upon the investigations which he had made for the Hydrabad Commission he had been very much of the opinion expressed by Dr. Manley; but the results which he had observed in his experiments had led to a considerable modification of his views. There could be no question that chlorotails of which he narrated, Dr. Hare had arrived at the form was a more dangerous drug than ether; but,

while during the operation itself ether was safe, it was apt to be followed by a number of serious consequences (from which chloroform was free), such as anuria, irritation of the kidneys, bronchitis, etc., which, if the facts were carefully collated, might bring the mortality from ether up to a much higher figure than was commonly supposed. At the time he commenced his experiments he was quite confident that in chloroformpoisoning death was ordinarily due to cardiac failure; but he found to his surprise that it was the respiration that always failed first and that it was practically impossible to kill a dog by cardiac failure under the use of chloroform. In other words, chloroform had not the lethal effect upon the heart that was generally supposed; and, in fact, in the case of animals chloroform was a drug less lethal to the cardiac muscle than quinine. He had repeatedly found that the heart's action continued after the respiration ceased. In conclusion, he called attention to a matter, which he thought had considerable influence in determining the mortality from chloroform, and that was the question of climate, though why this should be so he could not satisfactorily explain. In the Northern and Eastern States, as was well known, ether was almost universally used as an anesthetic, while in the Southern States chloroform was the agent commonly employed. In Texas, it was said, there had never been an accident from chloroform, and very few had occurred in India. It was also a fact, he had found, that American dogs were more susceptible to the action of chloroform than the Pariah dog of India.

Recent Literature.

A Manual of Therapeutics. By A. A. STEVENS, A.M., M.D., Lecturer on Terminology and Instructor in Physical Diagnosis in the University of Pennsylvania, etc. Philadelphia: W. B. Saunders. 1894.

The author touches briefly on the physiological action of drugs and then takes up each drug in its alphabetical order, giving an outline of the properties, action and uses of each. A few pages are devoted to remedial uses other than drugs; and under the heading of applied therapeutics, suggestions are given for the treatment of various diseases. The book closes with a chapter on "Incompatibility in Prescriptions, a Table of Doses, etc." The author's aim has been to prepare a manual for students which should present an outline of modern therapeutics, "to be filled in and extended by the systematic study of the larger works." And he has succeeded very well in his aim.

Diseases of the Chest, Throat, and Nasal Cavities.
Including Physical Diagnosis and Diseases of the Lungs, Heart and Aorta, Laryngology and Diseases of the Pharynx, Larynx, Nose, Thyroid Gland and Esophagus. Third Edition, revised. With 240 illustrations, 718 pages. By E. FLETCHER INGALS, A.M., M.D., Professor of Laryngology and Practice of Medicine, Rush Medical College, Chicago, etc. New York: William Wood & Co. 1894.

The third edition of Dr. Ingals's justly popular book appears but little over a year since the second edition was published. It is a little larger than the last edition; the additions being mostly to bring the work cepted for the city by Mayor Gilroy.

up to date. The book is an admirable one, the arrangement of subjects good, their relative importance well brought out, and the descriptions clear and concise. In spite of the well deserved popularity of the book in its united form, our criticism of the second edition, that it would be more generally useful if bound in two volumes, would apply equally to this. On this subject the author says that he has "brought these two classes of disease, that is, chest and throat, together, because the parts are so closely related that when one is diseased it is generally necessary to interrogate the others before a correct diagnosis or proper plan of treatment can be reached." If this were carried to its logical conclusion, would it not be necessary to bind up a treatise on general medicine with most of our text-books on special subjects? But this minor point is easily overlooked in a book which is so good.

Emergency and Hygiene Notes for the Militia. By WILLIAM H. DEVINE, M.D., Surgeon Ninth Regiment Massachusetts Volunteer Militia. Boston: Damrell & Upham. 1894.

This manual of 86 pages appears to be the notes, but considerably extended, which have been generally used by those who have given emergency lectures under the auspices of the Massachusetts Emergency and Hygiene Association. They would be of value to those who had listened to the lectures, when preparing for an examination. The writer is not quite clear regarding the use of the words aseptic and antiseptic. The statement that "In most of the States, the National Guard has a well-trained, efficient ambulance corps," is incorrect, the Military Information Division of the Adjutant-General's office of the U. S. Army, reports only seven States so equipped.

The writing of this manual is one of the evidences of the increased interest that is now taken in the medical department of the volunteer militia.

Lectures on Auto-Intoxication in Disease, or Self-Poisoning of the Individual. By CH. BOUCHARD, Professor of Pathology and Therapeutics, Member of the Academy of Medicine, and Physician to the Hospitals, Paris. Translated, with a Preface, by THOMAS OLIVER, M.A., M.D., F.R.C.P., Professor of Physiology, University of Durham; Physician to the Royal Infirmary, Newcastle-upon-Tyne; and Examiner in Physiology, Conjoint Board of England. In one octavo volume; 302 pages. Philadelphia: The F. A. Davis Co. 1894.

Professor Bouchard's book gives to the general practitioner an excellent account of the important rôle of auto-intoxication in disease. The careful study of the various body poisons and their action is of more than scientific interest at the present time, and the suggestions as to the therapeutic management of disease are of no little value. The book will repay the reading.

THE STATUE TO DR. SIMS. — The bronze statue to Dr. J. Marion Sims, the money for which was subscribed by members of the medical profession in various parts of the country, was unveiled in Bryant Park, New York City, with appropriate ceremonies on October 20th. Addresses were made by Drs. George F. Shrady and Paul F. Mundé, and the statue was accepted for the city by Mayor Gilroy.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, OCTOBER 25, 1894.

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REPORT OF THE DIRECTOR OF PHYSICAL TRAINING IN BOSTON'S PUBLIC SCHOOLS.

In his first report, presented December 31, 1891, Dr. E. M. Hartwell, the director of physical training in the Boston Public Schools, "endeavored to set forth the principal events which have signalized the history of physical education during the nineteenth century; to describe in a general way the attempts that have been made in this country, - and more particularly in our own Commonwealth and city, - during the past seventy years, to make physical training a genuine and effective department of public and private education; and to give a connected account, in a somewhat detailed way, of the measures taken in relation to physical education by the Boston School Committee since 1833 (the date of its first enactment on the subject), so far as those measures could be determined from a study of the Committee's records and reports, and its rules and regulations. Attention was called to some of the fundamental teachings of modern science with regard to the nature and effects of systematic bodily exercise." The practical bearing of such teachings upon the problem before the school authorities was likewise adverted to.

In the present, which constitutes his second report, Dr. Hartwell discusses more fully and particularly the principles of physical education in the light of physical education in the light of physical education, in order to emphasize "the close — nay, vital — relations which exist between physical and all other forms of education, and in order to establish a standard of measure which shall enable one to estimate the worth and weight of the results of previous endeavors."

Dr. Hartwell sketches the athletic revival which followed the close of the War of the Rebellion, and the subsequent era of gymnasium building; the spread of school gymnastics in cities and its causes, the moving motive for which as one phase of the increasing agitation for hygienic reform in education he finds in the "widespread, half-unconscious but deeply seated and

unappeasable yearning of the people for efficient means wherewith to counteract the destructive influences which threaten the health and vigor of the children fated to be born and bred in the great cities of the land"; he dwells upon the growth of great cities as one of the most striking and momentous phenomena of the present century; he points out that in the United States, Massachusetts is par excellence the Commonwealth of cities, the urban population of this State constituting in 1890, 69.90 per cent. of the total — there being then 47 towns and cities with a population of 8,000 or upwards, whereas in 1820, 89 per cent. of the population was in towns of less than 7,000 inhabitants, — and that should the urbanization of this population proceed at its present rate eleventwelfths will be city-folk before ten years are past. The declaration that "the further progress of civilization is to depend mainly upon the influences by which men's minds and characters will be affected by living in large towns" is the key note to the rest of this valuable, suggestive and well digested report.

Dr. Hartwell very justly places education among the leading industries of Massachusetts; he shows by figures and tables that the economic worth of a healthy and vigorous race of school children is a calculable quantity, and that the control of public-school affairs in this State is already in the hands of city school boards. Whilst lamenting the absence of any data provided by school authorities or boards of health to show whether "schooling" as an occupation is beneficial or prejudicial to public health in the United States, and pointing to the fact that, under present conditions, it would be easier to estimate losses entailed by hog cholera and the cattle plague throughout the Union than to determine the number of children who succumb annually to school diseases in any State, Dr. Hartwell makes a gallant attempt with such materials as are at hand to estimate the losses due to deaths of Massachusetts school-children. His conclusion is that such losses are largely in excess of what is necessary and irremediable and also in excess of similar losses in so great and densely populated cities as London and Berlin.

The inevitable conclusion is that municipal and school limitation are better devised and more efficiently carried out in those cities than in Boston. Granting then the deteriorating influences of school and city life, Dr. Hartwell would have protection against these influences sought, not in the compulsory study in the public schools of the elementary principles of physiology and hygiene, but in the strengthening and development of the nervous system through the broad and intelligent cultivation of the "motor element in education."

In addition to the general discussion of physical training in its application to the public-school system as a hygienic and educational factor which we have thus very briefly summarized, the present report contains some interesting statements and suggestions in regard to stammering and stuttering among public

school children; and also a very timely discussion of the seating of pupils in the public schools. The method of seating which now prevails is "so arbitrary, antiquated, and inadequate" that it needs amendment, and Dr. Hartwell is deeply and very properly impressed with the great importance of enlightening the public mind with regard to the essential principles involved in the construction and use of school-furniture. He considers it eminently desirable "that the whole problem of seating should be authoritatively pronounced upon by a commission of disinterested men, who are competent and willing to avail themselves of the best that has been attempted or accomplished by similar commissions in Europe during the past ten years. The conclusions and recommendations of such a commission, if it were appointed and supported by a representative organization such as the Massachusetts State Board of Health, the Massachusetts Medical Society, or the State Board of Education, or by the conjoint action of all three, could hardly fail to prove widely influential in promoting the public welfare. By hastening the settlement of vexed questions, and by obviating the necessity of costly and partial experiments, with all manner of "improved chairs and desks" on the part of the school boards of the Commonwealth, such a commission would save the cost of its investigations and publications many times over to the taxpayers of the State."

We are conscious of having done scant justice to this excellent and painstaking report which deals with a subject of vital interest to medical practitioners, but hope we have said enough to induce our readers to procure and consult the report for themselves.

MEDICAL NOTES.

THE MEDICAL SOCIETY OF VIRGINIA. — The Virginia Medical Society held its annual meeting in Richmond on October 23, 24 and 25, 1894.

APPROPRIATIONS FOR IMMUNIZED SERUM FOR DIPHTHERIA. — The municipal council of Paris has appropriated fifty thousand francs for the purchase of anti-diphtheritic serum for the various city hospitals. In Berlin six thousand marks have been voted for similar purposes.

BEAUTY AND PROFESSIONAL SUCCESS.— The New York Record passes this judgment on The Composite Physician of Boston: "Prof. H. P. Bowditch has published in McClure's Magazine two series of pictures of twelve Boston physicians with their composite photographs. The second series and its composite represents the same gentlemen five years later. Dr. Bowditch's article is a contribution to science rather than to the beautiful. We say this after a really unbiased and sympathetic search for a handsome man among the twelve esteemed and eminent confrères. We do not find, to be sure, any striking type of the opposite kind; there are no features that

are absolutely Socratic in their curves or their asymmetry. But it is evident that Boston's twelve have not won success through the meretricious aid of personal loveliness."

THE PRACTICE OF MEDICINE BY WOMEN IN 1572.

— In an address before the Yorkshire Branch of the British Medical Association this summer, Mr. W. H. Jalland stated that York seems to have been ahead of most places in countenancing the practice of medicine by women. In closing his address (Quarterly Medical Journal) he says: "I find on reference to the Corporation Minutes dated 1572, Elizabeth XIV, the following entry: 'And for as much as it appeareth that Isabel Warrick hath skill in the science of surgery and hath done good therein, it is therefore agreed by these presents that she upon her good behaviour shall use the same science within this City without let of any of the surgeons of the same.'"

THE SCARCITY OF PATIENTS. - There may be some comfort to the many physicians who have felt the long continued "dulness" in their practice, in learning that it is not a local stagnation, but that the same conditions are being felt in other parts of the world. English medical journals speak of the "marvellous health of the country"; and the large numbers of physicians who have attended the many congresses without being missed, so few are the patients. An Edinburgh correspondent of the Medical Press writes recently, "that in that city it was a vacant vacation with a vengeance; there was absolutely nothing stirring, and he knew of one practitioner acting as locum tenens for seven others on their holiday, who, notwithstanding this weight of responsibility, yet found ample time to play golf every day."

A Mechanical Aid to Expectoration. — A correspondent writes to the Lancet describing a simple means which he found effective in aiding expectoration: "A few years ago, when suffering from a cold with the accompanying tracheal catarrh I found that I could greatly facilitate expectoration on coughing by compressing the trachea by the thumb placed in the suprasternal notch. By this means the expulsive force of the air on coughing is very much increased and any mucus in the trachea above the point of pressure is readily blown through the glottis. The pressure, though requiring to be firm, is not painful. I have never recommended this procedure to any patient advanced in years when the possibility of the rings of the traches being ossified would render it dangerous."

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the week ending at noon, October 24, 1894, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 97, scarlet fever 27, measles 10, typhoid fever 15.

THE DAVIS SCHOOL IN WEST NEWTON REOPENED.

— The Davis Primary School at West Newton, Mass.,

which was closed on account of diphtheria some weeks ago, was reopened on October 22d, after a thorough disinfection and the relaying of new floors.

BOSTON PUBLIC BATH SPATISTICS. - During the past summer over one million persons made use of the public baths of the city of Boston. The numbers were distributed as follows:

MALES				June	July	August	Sept.
Craigie's Bridge .				85,480	41,100	28,100	8,000
Malden Bridge .				12,390	29,154	13,139	1,664
Dover Street .				14,173	18,728	9,620	2,064
L Street				58,067	142,600	61,395	21,403
Charles River Bridg	ge .			23,829	27,042	16,855	6,338
Maverick Street .	•			17,429	15,399	13,858	5,411
Chelsea Bridge .				6,258	17,142	16,800	5,306
Mt. Washington Av	enu	٠.		14,435	22,285	17,691	9,500
Border Street .				12,580	18,726	15,412	7,756
West Boston .				25,875	20,335	12,430	6,620
Commercial Point				2,325	5,635	4,370	1,230
Total, Males,				222,836	358,146	204,670	75,292
Frmales							
Commercial Point				2.684	8,393	6,758	2,304
Chelsea Bridge .				2,250	6,580	5,815	1,580
Malden Bridge .				1,305	2,838	1,493	278
Dover Street .				5,130	9,174	5,427	2,060
M Street				9,282	21,100	19,401	9,255
Border Street .				9,940	11,985	10,105	2,581
Charles River Bridg	ge .		,	15,839	26,610	17,005	4,564
Total, Female	:5,			46,430	86,680	66,004	22,617
Total, Both S			I ARS	 269,266	444,826	270,674	97,909

NEW YORK.

DEATH OF DR. STUART DOUGLAS. - Dr. Stuart Douglas, who was widely known as an alienist, died October 14th of acute Bright's disease, at the age of thirty-four. Dr. Douglas, who was born at Culpepper, Va., was graduated from the University of Virginia and received the degree of M.D. from the College of Physicians and Surgeons, New York, in 1882. He became interested in the study of mental disease and for two or three years served as resident physician in the New York City Insane Asylums. For the last seven years he has been in charge of the insane wards at Bellevue Hospital.

THE UNIVERSITY OF THE CITY OF NEW YORK. -On the occasion of the opening exercises of the new academic buildings of the University of the City of New York on the site recently purchased on the northern bank of the Harlem (to be designated in the future as "University Heights") Chancellor Mc-Cracken, in the course of his remarks, said, "We place our athletic field and gymnasium close by our halls, because we mean physical training to be college work as much as language or science. Give me ten men that will every one pass the severest tests of the medical examiner and never take an athletic prize, rather than five men that can take prizes and five men rejected by the medical examiner. 'Physical vigor first and second, intercollegiate record third,' is my motto for athletics."

THE NEW YORK HOSPITAL DEPARTMENT FOR THE INSANE. — The new buildings of the Department for

A large number of invitations had been issued for the occasion, and the guests, among whom were many physicians from New York and the adjacent towns, were received by Dr. Samuel H. Lyon, the Medical Superintendent, who assigned them in groups to attendants who acted as ushers and escorted them through the various buildings. The inspection, which was very gratifying in every way, terminated in the chapel building, where a collation was served. The main features of this magnificent new institution have already been described in the JOURNAL. The farm upon which the hospital is built contains about three hundred acres, and from the windows there is a fine view in all directions.

THE FOUR YEARS' COURSE AT THE COLLEGE OF PHYSICIANS. - In the College of Physicians the new four years' course commences with the present season, but notwithstanding this fact the registration indicates that a larger class will enter this year than last year, when the highest number yet recorded was reached. In the session of 1893-4 the total enrolment of students numbered 766, a gain of 112 over the previous year. To the development of the four-year curriculum much attention has been devoted by the Faculty. Each student will be examined, each year, upon the work of that year, and each student of the four-year will be required to elect from a list of elective courses either one course or more, as may be hereafter determined.

Miscellanp.

MEDICAL TRIBUTES TO DR. HOLMES.

FROM among the many notices of Dr. Holmes, from medical sources, during the past fortnight we quote the following. The Medical News says:

To say that in Dr. Holmes America has lost her greatest physician is not one of the exaggerations to which men are prompted in expressing their grief over a recent death. We have not in mind only his contributions to medical science and literature, which, although overshadowed by his work in general letters, were many and important, but we are thinking of that wider province of the physician that lies beyond the laboratory and the drug-shop, the hospital and the consulting-room.

We doubt whether in the long period of Dr. Holmes's activity any other English writer has done so much for the health of the minds of his readers; and his readers em-braced all classes. Rich and poor, old and young, learned and unlearned, found in his pages something that they could understand, and the understanding of which bettered them mentally and morally. And this highest praise that a writer can have, namely, that the best-equipped readers found the most profit and entertainment in his writings, is universally conceded to Holmes.

We were about to say that his was a simple nature; and the statement would have been true in the one sense that the meretricious in literature or in life repelled him; but his intellect was subtle and complex as civilization. ence, art, nature, philosophy were all his, and all left their impress upon him. Cosmopolitan sympathy and experience modified and were modified by the effects of Puritan the instance of the New lork Hospital were opened ancestry and old-time New England training. In his comfor public inspection on the afternoon of October 17th. plex make-up there is no doubt that his medical studies and

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teaching exerted a dominant influence. In the felicitous poem read by Dr. Weir Mitchell to the College of Physicians of Philadelphia on the occasion of the presentation to that body of a portrait of Holmes, Minerva and Apollo are represented as contending for, and at last agreeing to divide, the lad. But, unless we concede that medicine as well as poetry belongs to Apollo, we must hold Minerva to have obtained the "biggest half" in the division.

Dr. Holmes never lost sight of his profession, and never allowed the world to lose sight of it. Throughout his writings, from "The Fly in the Stethoscope" to the goodnatured raillery at a too-exclusive specialism in "Over the Tea-cups," he did not hesitate to hit at its weaknesses and foibles; while, apart from the admirable characters in his novels, he has in many noble passages pictured the life and influence of the true, modest, self-sacrificing doctor in terms of the highest appreciation.

The Medical Record contains the following:

Proud as we are to think of him as a member of our profession, and proud as we are of his achievements in it, we realize that his great work in life had more to do with making people better spiritually than making them well physically. Physician by education, he devoted himself to practice and the acquisition and imparting of scientific knowledge. Poet by nature, he spent his leisure time and declining years in those writings which have so endeared him wherever they have been read. Philosopher by thoughtful study and love of his fellow-man, he made for many life's path less rugged by kind and philanthropic words, and when his own long path brought him toward life's foot-hills he was content and said, "he should sorrow deeply if he had the idea he was to become helpless in body and mind." This was spared him. He reached the end, "eighty-five years young," as he has expressed it, and happily met death as a little child meets sleep, unconscious of fatigue, and only mindful of a day more full of pleasures than of pain.

To his students of twenty or thirty years ago, as they recall the words of the genial professor in describing the arch of the female pelvis, "Gentlemen! this is the triumphal arch under which every candidate for immortality has to pass," the thought must occur how nearly has been attained that immortality of which he spoke, and how like a triumphal arch the whole modest life!

In the New York Medical Journal we find this paragraph:

His greatest work was his essay on "The Contagiousness of Puerperal Fever," read before the Boston Society for Medical Improvement in 1842, of which he subsequently wrote: "When, by the permission of Providence, I held up to the professional public the damnable facts connected with the conveyance of poison from one young mother's chamber to another's—for doing which humble office I desire to be thankful that I have lived, though nothing else good should ever come out of my life—I had to bear the sneers of those whose position I had assailed, and, as I believe, have at last demolished, so that nothing but the ghosts of dead women stir among the ruins."

In a kindly notice in the *British Medical Journal* Mr. Ernest Hart concludes the account of a visit made by him to Dr. Holmes in September, 1893, with these words:

And so I passed away from the presence of one of the most loveable and notable figures of modern medicine, a personality pregnant with the perfume of ripe and sweet old age, and leaving recollections of a rarely perspicuous and sympathetic insight, a playful and pungent, but not caustic humor, and a persuasive benevolence which was farreaching, but discriminating.

From the obituary notice of the same journal headed "His Career as a Physician," we quote the following extract:

The praise of Wendell Holmes, the writer, the charming poet, the inimitable causeur, the delightful humorist, whole wit circum procordia ludit, is in the mouths of all men; his niche in the Temple of Letters needs no stone of our fashioning to complete it. The splendor of his literary fame, however, has somewhat dazzled the eyes of his more recent contemporaries to the excellence of the work which in his earlier days he did for his profession and for science. Any work done by Wendell Holmes was sure to be brilliant, but it is a striking proof of the versatility of his powers that his scientific work was as solid as if he had been the dullest Dryasdust that ever dissected the muscles of the back or counted the markings on the different members of the pediculus family. In a medical journal it is fitting that this aspect of Wendell Holmes's many-sided genius — which has, as was natural, received only imperfect recognition from most of our contemporaries — should be briefly dwelt upon.

Dr. Gairdner, of Glasgow, an occasional correspondent with Dr. Holmes during forty years, writes a friend in Boston:

As a medical poet he is unique; and both in his poems and in his prose the medical training and intellectual bias stand for a good deal. I hope some one will do justice to this aspect of him. He sang the praises of Lowell in a noble poem. Who is to sing in a like manner his own?

THE Lancet of October 13th has a very appreciative and discriminating editorial notice of Dr. Holmes and also a longer obituary. The editorial we reprint in full, for in it we detect the sentiments of Dr. Wilks quoted in the obituary notice, sentiments which accord with our own estimate of the wholesome influence of Dr. Holmes's professional training upon his contributions to literature:

The death of Oliver Wendell Holmes must necessarily appeal with particular force to all who follow, as he followed, the profession of healing. While the purely literary world is lamenting the loss of the brilliant essayist, the delicate poet, the spontaneous humorist, the eversympathetic, ever-appreciative colleague, we are lamenting in him the medical man of letters. In so doing we are not debarred from admiring sincerely, even fervently, his great and fascinating qualities, but it is in his character of a physician that he makes special appeal to us. And this is the more right that it is in the character of physician that he himself makes many of his most intimate claims upon the attention and affection of his readers. The medical men of letters are a comparatively small band. The names of Smollett, Thomas Browne and John Brown at once occur to us; Keats and Goldsmith both served an apprenticeship to our art; and more than one living physician is a good as well as a popular novelist; but the union of medicine and letters is rare. Oliver Wendell Holmes was not only an example of this rare class, but in many respects he was a unique example; for in him the physician — now as anatomist or physiologist, now as psychologist, now as diagnostician — was ever present and ever speaking. He wrote no book without drawing largely upon his scientific experience; he displayed in all his literary workmanship, in thought as much as in expression, an accurate tolerance - a capability of taking the large view, with a resolve to be correct about small things - that we make bold to say, as he would often proudly say, had been largely developed by his particular training; and many of his wittiest little parables and paraphrases — many of the most characteristic sayings of those three charming rulers of the breakfast-table - were the direct outcome of his medical learning

Si sic omnes! For the public nowadays is suffering from a surfeit of medicine in its literature. Heredity and the transmission of physiological or psychological taints; sexual problems; problems in mental pathology form the essence of the work of a large school of writers. Some-

times the work is well done and sometimes extremely ill done. Now and again the great romancer will by a few illuminating words supply a real contribution to the scientific side of psychology; more often we are asked to solace ourselves after the day's work with long-drawn questions pruriently put and left unanswered by a string of pompous deductions. And so we say: Ah, if all were like the Autocrat of the Breakfast-table! Would that all our advanced novelists would recognize, first, that it is necessary to know before instructing and to see before leading, if the ditch is to be avoided; and, second, that there is wisdom in restraint and an art in remaining silent — that furibund descriptions of animalism, if accurate, are inappropriate in general literature, and that to display to common gaze a dissection of the morbid imaginings of the sick mind may be an act of positive indecency. Oliver Wendell Holmes was a man who knew. Whither he would lead, his readers might always be content to follow without fear of the ditch. His science was sound, his wisdom indubitable, and his powers of observation and introspection were of the acutest. And how did he use them? Not by shirking the responsibilities laid upon him by his possession of exceptional knowledge, as great men have before now done through fear of giving offence; on the contrary, his whole work is pervaded by his particular learning. And not by persistently presenting to the mental eye the dissected body or the sick soul, the charnelhouse, the bordel, or the asylum; on the contrary, his multifarious writings are absolutely free from the taint of nastiness. Oliver Wendell Holmes used his beautiful endowments in the highest way for the good of all, neither burying his talents nor prostituting them. He was removed by a lovable, modest, sympathetic nature from all possi-bility of writing the harmful; he was removed by a true and highly cultivated artistic sense from the common error of spoiling a picture by overloading it with unnecessary details; lastly, and chiefly, he was removed by his assured place as a man of scientific education, undoubted learning, and equally undoubted literary genius from all temptation to medical or linguistic display. From this position, with the conscientiousness of the skilled workman and the unpremeditated charm of the poet, he poured out broad lessons of human sympathy and preached a genial, yet shrewd, gospel of kindliness.

A BUG STORY.

DR. C. F. DEMAY, of Louisiana, is responsible for the following communication to the Louisville Medical Monthly:

"A few nights ago, while sitting on my veranda, admiring the myriads of fire-flies swarming around me, I saw a toad swallow an unfortunate Elater noctilucus, and, to my astonishment, observed that the insect had not been killed in its most perilous journey. The bug could be seen very plainly, now and then throwing its phosphorescent light. An electro-abdominal lamp could have given no better results. I captured the toad, and saw very plainly, at intervals, its stomach and the circulation, color of its blood, both arterial and venous. A finer sight I surely never beheld. It demonstrates the future uses of electricity for diagnostic purposes in abdominal diseases."

JERSEY CITY WATER.

THE water-supply of Jersey City has been the subject of much serious discussion for the past year, and there is little doubt that the sources of the supply are

the people of Jersey City have had little else to use for a long time, and the dilution has not been carried to the higher potencies. The death-rate from typhoid fever is exceedingly high; and during the past summer it is reported that such is the alarm of the people, that they not only purchase bottled and aerated waters to drink but for bathing purposes; so that, if the daily press is to be believed, the best regulated families bathe and wash in the foaming and sparkling carbonated waters. Ere long the Apollinaris Spring Company (limited) — the Company, not the springwill announce that the water is "unexcelled for the table and the tub."

The scientifically-inclined residents of the city are kept informed of the character of their water by the daily papers, from one of which we clip the following sample of biological literature. After giving a list of the vegetable and animal organisms found by Mr. J. A. Hall in his examination of water from a city main, the paper thus elucidates its readers:

"For the benefit of those who are unfamiliar with the nomenclature of the animal organisms of ditch water, it may be stated that the cilliata are little creatures that go round and round with little hair-like oars, and manage to kick up a dreadful and incessant lashing and turbulence; that the anguilla is a wee eel. such as lives in the stenchy bilge water of ships' holds; that the rotifers are things resembling pinwheels, and which revolve at a fabulous rate of speed; that the annelids are hideous and sickening jointed worms, which, enlarged by an oxyhydrogen or limelight microscope, could be depended upon to throw an audience of adult spectators into paroxysms of alarm."

With such a vision before them, the terrified inhabitants could not be blamed if they drank only Hunyadi water and did not bathe at all.

The discussion has thus its amusing side; but the condition is indeed a serious one for the city, and the following analysis of the water by Mr. Hall is not a pleasant reading.

The figures represent parts per hundred thousand.

WATER FROM THE PASSAIC RIVER, JERSEY CITY INTAKE, Low tide High tide Chlorine 1.48 6.97 Nitrogen as free ammonia .086 .135 Nitrogen as organic ammonia .070 .118 Total solids 20.0 22,60 Organic solids 6.60 8.20

KING HUMBERT AND THE CHOLERA EPI-DEMIC AT NAPLES.

THE Town Council of Naples has placed upon the façade of the Maddalena barracks a tablet commemorating the kindly and courageous visit of King Humbert to the city during the cholera epidemic of 1884. Of this visit and its dramatic Italian manner the Lancet says: "His Majesty had arranged to inaugurate a race-meeting at Pordenone in the Venetian territory, when the news reached him that, twenty-four hours previously, there had been an outbreak of cholera in Naples; that in one night two thousand people had been attacked; and that of these nearly one thousand had died. . Without a moment's loss of time the King telegraphed to the Venetian Syndic: 'A Pordenone far from suitable. The diluted sewerage of large si fa festa. A Napoli si muore. Vado a Napoli.' towns and cities is not the best of drinking-water, and (At Pordenone there is merry-making. At Naples

they are dying. I go to Naples.) And to Naples he went; and from day to day visited the cholera-stricken in the most squalid, most repulsive dens, assisted the medical men and the nurses; came so near the patients that three times in the same twenty-four hours he would have to get his clothes burnt, and for a whole week continued his rounds from bedside to bedside till the epidemic was sensibly on the decline and the moral courage of the inhabitants was restored. His food and drink during those memorable seven days were supplied him regularly from Rome—supplied, however, without his knowledge."

The inscription on the tablet reads as follows: "Quì dove tanti soggiacquero - Al morbo crudele infestante Napoli — Umberto Re d'Italia — Gli ammorbati visitò tutti e all'origliere chinossi — E la parola della pietà disse a ciascuno — onde rinata la fiducia nella lealtà e nella provvidenzia dell'autorità pubblica — Nei corpi affranti rasserenaronsi gli animi — Chè tanto è più profonda la efficacia dell'esempio — Quando di più alto e più spontaneo scende — A memoria perenne di tanta virtù di sè emulata — Qui stesso dalla carità di sacerdote piissimo - il cardinale Sanfelice - questa lapide - il 10 settembre 1894 — Il Municipio pose. (Here, where so many succumbed to the cruel disease with which Naples was afflicted, Humbert, King of Italy, visited all the sick and bent over their pillows with a word of commiseration for each, whereby confidence in the devotion and providence of the public authority was restored, and the people's minds were calmed ouce more in their wasted bodies; for so much the more penetrating is the force of example, the more exalted and the more spontaneous the source from which it descends. To the perpetual commemoration of so great virtue, self-emulated in this very spot by the charity of the devout priest, Cardinal San Felice, the town council erected this tablet on the 10th September, 1894.)"

Correspondence.

REMINISCENCES OF THE HARVARD MEDICAL SCHOOL IN THE YEAR 1846.

Boston, October 18, 1894.

MR. EDITOR: — The (then) new Harvard Medical School building, at the foot of Grove Street, was opened for use in 1846. My pupilage at the school began at the same time, and that is how it happened that I was present at the opening exercises. Edward Everett, who was then President of Harvard University, made one of his characteristic addresses, and Dr. George Parkman gave a collation in the room intended for the Warren Anatomical Museum, where "Big Dick" and his companions afterwards made their home. When the company were assembled around the table, Dr. Parkman took a large knife, and with a flourish cut off the top of a column of ice-cream, saying, "I will now do an amputation." That was the signal to fall to. The piece of meadow land upon which

the building stood was a gift from him to the University.

The first lecture in the morning was by Dr. John Ware, on "Theory and Practice." His lecture was written, and he contined himself wholly to his notes. He stood while delivering it with his watch on the table before him. He occupied the full hour, no more and no less. His lectures were beautifully written; his thoughts were clear, concise and logical; and his manner was pleasant, though dignified. His object was not to amuse, but to instruct.

Following Dr. Ware came Dr. Jacob Bigelow, Professor of Materia Medica. His old, white horse with his goggles

on, generally appeared a little behind time. During his lecture, Dr. Bigelow sat in an arm-chair. He would take his seat, then slide forward until his head rested on the top of the chair-back, and with a few sample drugs before him, and looking upward at an angle of forty-five degrees, he would deliver his lecture (without notes) in a somewhat grave and dignified manner. He avoided minor details and gave only the important points of his subject, with occasional touches of mild humor. It generally happened that his lecture was finished a little before the end of the hour, so that it was cut short at both ends.

Dr. George Hayward, who was Professor of Surgery, is chiefly remembered for his lecture on "Jints." "When I was a dresser in the London hospital," he would say in his high-pitched voice, "it was my good fortune to serve under Sir Benjamin Brodie, who wrote the best work on this subject, namely, 'Brodie on the Jints.'"

Dr. J. B. S. Jackson was an enthusiast on his subject (pathology); typhlo-enteritis was a hobby with him and many an expert in appendicitis of the present day might learn much of him. In examining a morbid specimen he would always say, "Most remarkable, very rare." The students called him "Morbid John."

Dr. Webster was considered dull, but I never found him so. His lectures were well written and his experiments generally successful, but when not so he always claimed that more was to be learned from the failure than from success.

This was the last year of Dr. J. C. Warren's service as Professor of Anatomy and Operative Surgery. He was dignified in his manner, thorough and forcible in his instruction.

He was followed by Dr. Holmes, in anatomy, who could not help making a dull subject attractive and enjoyable. As a student of the Tremont Street Medical School, I attended a quiz at his house in Montgomery Place, once a week. After the recitation was over, social converse was held that was delightful. His ordinary conversation, it seems to me, was bright, sparkling and interesting as anything that he has written. He stood in the centre of the room, the nucleus of a delighted and grinning crowd.

Each professor had one course of lectures that he repeated annually, verbatim et literatim. So far as I know, only three students took full notes of all the lectures. These were Calvin Ellis, James W. Stone and myself. Ellis and Stone were expert short-hand writers, but I was not; but by leaving out all unimportant words, abbreviating many others, and using a few signs of my own invention, and rewriting the lectures, I managed to get them entire, and have got them now. Dr. Ellis acquired the highest reputation in his profession, and died in 1883. Dr. Stone was a strong abolitionist, and intimate with Dr. H. I. Bowditch and others of that belief. Among other things, he furnished students with obstetric cases at three dollars apiece. My first case was on Dover Street, then the extreme limit of the city. Beyond that was a howling wilderness, so to speak. From that place hourly omnibuses, owned by a Mr. Hawthorne, ran to Dock Square. My case was a tedious one, and I spent most of the day on the driver's seat of one of the carriages, impatiently waiting for the conclusion of the case. Dr. Stone died in 1863.

ing for the conclusion of the case. Dr. Stone died in 1863. Dr. Morton, a dentist who had an office on Tremont Street, opposite the Museum, announced that he had discovered a "compound" the inhalation of which would cause insensibility to pain, and had given to certain dentists the right to use it, among whom was Dr. Fisk, of Salem. The latter offered to administer it to the patients of Dr. A. L. Peirson, who was the principal surgeon for Salem and vicinity. This was done with complete success in several instances, one of which was a case of amputation of the breast. The late Dr. William H. Thorndike and myself were then pupils with Dr. Peirson, and assisted at these operations.

The secret "compound" was of a red color. Dr. Morton was anxious to try it at the Massachusetts General Hospital, but the surgeons there would not consent to use it unless its composition was first revealed to them. This

Dr. Morton was reluctant to do, but finally consented. Accordingly, on the 16th of October (1846), it was announced that a trial would be made. Other alleged anesthetics, including the nitrous oxide, had been tried and failed, and no one seemed to have any faith in this. Dr. Morton was not on hand at the appointed time, which gave rise to sneering remarks. However, he did appear later, and gave the ether from an inhaler with complete success. The operation (which was for the removal of a tumor from or near the face) was a bloody one. The patient (a woman) was seated in a chair, and blood soon ran down the trachea, nearly suffocating the patient. The operation was delayed by this, but was finally finished. Dr. Warren then turned to the students, and said, "Gentlemen, this is no humbug." Soon after, a more severe test was made on a patient suffering from disease of the spine. The actual cautery was passed zig-zag the length of the spine twice upon each side. The room was filled with the odor of burning flesh and smoke, but the patient did not wince. Dr. Warren said that this was the severest test possible, and showed the complete success of the ether as a destroyer of pain.

On a bed in a corner of a surgical ward was a young woman named Alice -, suffering from disease of the knee, for which amputation had been advised but declined on account of dread of the operation, she preferring death. One morning Dr. Hayward told her that he could give her something that would put her to sleep and make the operation painless; when she readily consented to have it done, and this was the first amputation under ether. It was done, I think, by Dr. Hayward, but possibly it may have been Dr. Townsend. Dr. Warren substituted chloric for sulphuric ether, and seemed to prefer it.

These desultory remarks are jotted down from memory and may interest some of the students of the year '46. ISAAC F. GALLOUPE, M.D. Yours respectfully,

A MEMORIAL OF CHARCOT.

NEW YORK, October 16, 1894.

MR. EDITOR: - The pupils and former associates of Charcot in Paris and throughout France are engaged in raising a fund for the erection of a bronze statue of him in the Salpêtrière. This movement is now receiving cordial and material support in Germany, in England and in Italy.

It has, therefore, seemed desirable to the New York Neurological Society that the profession in America join in this testimonial as an evidence of its appreciation of the eminent services of Charcot in neurology and medicine.

For this purpose, the Society has appointed the undersigned a committee to bring the matter to the attention of the profession and to receive contributions, which will be duly acknowledged and forwarded to the Central Committee in Paris.

EDWARD D. FISHER, M.D. E. C. SEGUIN, M.D. M. ALLEN STARR, M.D. CHAS. L. DANA, M.D. C. A. HERTER, M.D.

AN ABNORMALLY LOCATED CECUM.

NAVAL HOSPITAL, NEW YORK, Oct. 22, 1894. MR. EDITOR: — While operating upon a cadaver at Bellevue Hospital Medical School last week, I found the following abnormality which I think worth publishing. The cecum was found in the right hypochondriac region in close proximity to the gall-bladder, the appendix vermiformis was normal in structure and pointed downwards. Both structures were held in their place by the mesentery. The sigmoid flexure occupied the usual position of the cecum on the right side. There were no peritoneal adhe-Yours truly, sions present.

AMMEN FARENHOLT, Assistant Surgeon U. S. Navy.

METEOROLOGICAL RECORD.

For the week ending October 13th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:-

	Baro- meter		eter		Re hur	lati nidi		Dire of w	etion	Velo		₩o'	th'r.	inches.
Date.	Daily mean.	Dadly mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 ▲. Ж.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Rainfall in in
S 7 M 8 T 9 W10 T11 F12 S13	29.87 30.26	54 58 60 55 54 52 56	64 69 65 62 61 62 62	45 47 56 48 48 42 49	64 68 80 93 74 59 73	53 83 55 74 63 50 100	76 68 84 68	W. W. W. E. S.W. S.E.	N.W. S. N.W. W. W. W. S.E.	7 5 8 40 19 7 8	4 12 8 28 16 3 8	C.F. F. C. C. O.	C. F. C. F. R.	.28 1.25
	29.97		64	48	_	_	71							2.28

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threat ning; N., snow. † Indicates trace of rainfall — Mean for week.

RECORD OF MORTALITY FOR THE WERE ENDING SATURDAY, OCTOBER 13, 1894.

	opu.		r Ars.	Percentage of deaths from					
Oities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Infectious diseases.	Consump- tion.	Diarrhosal diseases.	Typhoid fever.	Diphtheria	
New York	1,956,000	656	226	14.55	10.95	5.70	1.50	5.25	
Chicago	1,438,000				_	_ =	_ =	_	
Philadelphia .	1,189,457	361	129	17.01	11.07	5.40	2.16	9.18	
Brooklyn	1,048,000	391	182	21.25	10.60	8.00	2.00	8.75	
St. Louis	540,800	188	55	00 50		8.48	6.89		
Boston	501,107	168	36	29.86	6.86	0.98	0.89	14.31	
Baltimore Washington .	500,000	_	_	_	_	_		_	
Cimalmosti	285,000 325,000	94	24	24.38	10.0	8.48	9.54	6.36	
Cleveland	325,000	94	46	28.62	6.36	8.48	1.06	4.24	
Pittsburg	272,000	78	41	32.00	21.76	21.76	5.12	3.84	
Milwaukee	265,000					_	J	5.52	
Nashville	87,754	25	10	20.00	12.00	8.00	8.00	4.00	
Charleston	65,165	27	8	7.40	18.50	3.70	3.70		
Portland	40,000	_	-	_	_	-	l —	_	
Worcester	100,410	2 5	11	20.00	12.00	8.00	8.00	4.00	
Fall River	92,233	42	23	35.70	9.52	26.18	4.76	2,38	
Lowell	90,613	35	13	28.50	14.25	14.25	l . 	11.40	
Cambridge	79,607	30	16	33.33	6.06	24.24	6.06	8.03	
Lynn	65,123		_	l .	_	=	-	I -	
Springfield	50,284	16	8	31.25	_	31.25	-	-	
Lawrence	49,900			==			- - -	-	
New Bedford .	47,741	28	11	16.60	13.28	16.60	_	-	
Holyoke	43,348	11	1	27.27	9.09	27.27	-		
Brockton	33,939	9	i	83.33	-	11.11 22.22	_	11.11	
Salem	33,155	10	6	22.22 40.00	_	20.00	10.00	_	
Haverhill	32,925	10	4	10.00	_	10.00		_	
Malden	80,209 29,806	15	ī	20.00	13.83	6.66	_	6.66	
Chelses Fitchburg	29,383	10	2	12.50	12.50	12.50	_	0.00	
Monton	28,837	7	4	42.84	12.00	14.28	_	28.56	
Clonester	27,293		I	20.01	_		_	40.00	
(Townston	26,955	12	7	50.00	8.33	8.33	_	41.66	
Waltham	22,058	10	Ž	20.00	20.00	10.00	_	10.00	
Quincy	19,642	_		_		_	_		
Pittsfield	18,802	7	0	28.56	28,56	14.28	_	_	
Everett	16,585	5	8	20.00			_	_	
Northampton .	16,331	6	2	50.00	-	16.66	_	83.88	
	10,00								
Newburyport .	14,073	8	1	-	33.33	_	_	_	
Newburyport . Amesbury	14,073 10,920	8	1	=	33.33	=		_	

Deaths reported 2,251: under five years of age 847; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 468, consumption 236, acute lung diseases 214, diarrheal diseases 195, diphtheria and croup 164, typhoid fever 62, scarlet fever 19, whooping-cough 12, cerebro-spinal meningitis and malarial fever 6 each, measles 4.

b each, measies 2.

From scarlet fever Cleveland 9, New York 4, Philadelphia, Pittsburg, Nashville, Haverhill, Pittsfield and Woburn 1 each.

From whooping-cough Brooklyn 7, New York 4, Fall River 1.

From malarial fever Brooklyn 3, New York 2, Brockton 1. From measles New York 3, Cleveland 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442 for the week ending September 29th, the death-rate was 16.1. Deaths reported 3,223: acute diseases of the respiratory organs (London) 184, diarrhea 147, diphtheria 98, scarlet fever 49, fever 43, measles 40, whooping-cough 36, small-pox (Liverpool and Birmingham 2 each, London 1) 5.

The death-rates ranged from 8.0 in Leicester to 22.8 in Liverpool; Bradford 16.1, Brighton 13.2, Croydon 10.7, Huddersfield 14.3, Hull 18.1, Leeds 14.1, London 15.3, Manchester 17.9, Newcastle-on-Tyne 20.9, Nottingham 17.5, Portsmouth 12.5, Sheffield 19.1, West Ham 11.8.

19.1, West Ham 11.8.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending October 6th, the death-rate was 16.0. Deaths reported 8,201; acute diseases of the respiratory organs (London) 215, diarrhea 111, diphtheria 85, measles 48, scarlet fever 42, fever 35, whooping-cough 34, small-pox (Liverpool 4, Birmingham 2, London 1) 7. The death-rate ranged from 10.1 in Plymouth to 23.7 in Liverpool; Birmingham 18.0, Bradford 14.2, Cardiff 11.9, Gateshead 13.4, Leeds 16.5, Leicester 10.8, London 15.4, Manchester 19.1, Newcastle-on-Tyne 19.9, Nottingham 14.9, Salford 18.7, Sheffield 17.4, Sangeag 12.6.

17.4, Swansea 12.6.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 13, 1894, TO OCTOBER 19, 1894.

Leave of absence for one month, with permission to apply to the proper authority for an extension of one month, is granted CAPTAIN EUGENE L. SWIFT, assistant surgeon, Fort Yates, North Dakota.

By direction of the acting Secretary of War, so much of Par. 1, S. O. 233, A. G. O., October 4, 1894, as directs First-Lieut. Isaac P. Wane, assistant surgeon, to report to the commanding officer, Camp Eagle Pass, Texas, after his relief from duty at Fort Supply, is so amended as to direct him to report in person to the commanding officer, Fort Clark, Texas, for duty at that part. that post.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U.S. NAVY FOR THE WEEK ENDING OCTO-BER 20, 1894.

- L. W. CURTIS, passed assistant surgeon, ordered to Chelsea Hospital.
- M. H. CRAWFORD, surgeon, ordered to the U. S. S. "Constellation."
- R. C. DEAN, medical director, President of Board of Medical Examiners, Navy Department.
- N. L. BATES, medical director, member of Board of Medical Examiners, Navy Department.

MICHAEL BRADLEY, medical director, member of Board of Medical Examiners, Navy Department.

- W. K. Scofield, medical director, President of Board of Medical Examiners, League Island, Pa.
- S. H. DICKSON, surgeon, ordered to temporary duty on U. S. Receiving-ship "Dale."
- C. U. GRAYATT, surgeon, detached from U. S. Receiving-ship "Dale," home, and wait orders.

HARVARD MEDICAL SCHOOL.

EVENING LECTURES.

The next lecture will be given on Thursday evening, November 1st, at 8 o'clock, by Dr. 8. J. Mixter. Subject, "Modern Surgery in Private Practice." Physicians are cordially invited.

SOCIETY NOTICES.

NORFOLK DISTRICT MEDICAL SOCIETY. — The stated meeting will be held at Amory Hall, 67 Warren Street, Roxbury, Tuesday, October 30th, at 3 F. M.

The order of business is as follows: (1) Reading of Records. (2) Report of Committees. (3) Election of Nominating Committee. (4) Incidental Business. (5) Communication, "A Study of Hebephrenia," E. B. Lane, M.D.

The Censors will meet at the same time and place. Some special business is to be laid before the Board.

The Examination of Candidates will take place November 6th

The Examination of Candidates will take place November 6th, at the office of the Secretary, 130 Warren Street, Roxbury. The written examination will begin at 7 P. M., the oral at 8 P. M.

J. C. D. PIGEON, M.D., Secretary.

MEDICO-LEGAL SOCIETY, SECTION ON MEDICO-LEGAL SUR-GERY. There will be a joint session of the Medico-Legal So-ciety and the Section of Medico-Legal Surgery, at the Academy of Medicine, New York City, on Thursday, November 15, 1894,

miscellaneous business. Nomination of officers for the ensuing

miscellaneous business. Nomination of omeers for the ensuing year.

II. Session of the Section on Medico-Legal Surgery, Chief Surgeon Granville P. Conn, M.D., Chairman, in the Chair: Opening address by Chief Surgeon Granville P. Conn, M.D., on "Hygienic Training of Men in Charge of Railway Trains." "Expert Examination of Plaintiff in Damage Cases, when Ordered by the Court." By George Chaffee, M.D., ex-President New York State Society of Railway Surgeons. Discussion, limited to five minutes, by Clark Bell, Esq., Judge Roger A. Pryor, Nelson Smith, Esq., Judge Abram H. Dailey, H. W. Mitchell, M.D., Professor Stillings, of New Hampshire, Chief Surgeon V. C. R. R., M. Cavana, M.D., and ex-Surrogate R. S. Ransom. "The True Line of Duty of the Railway Surgeon." By Clark Bell, Esq. Discussion, five minutes each, by Surgeon George Chaffee, M.D.; Surgeon A. M. Phelps, M.D.; R. S. Harnden, M.D.; C. M. Daniels, M.D.; S. S. Thorne, M.D.; J. B. Murdock, M.D., Nicholas Senn, M.D.; S. S. Thorne, M.D.; J. B. Murdock, M.D., and others. "Medical Witnesses." By R. S. Harnden, M.D., ex-President Eric Railway Surgeons. Discussions, five minutes each, by H. W. Mitchell, M.D.; Chief Surgeon Estes, Lehigh Valley R. R.; M. Cavana, M.D.; C. M. Daniels, M.D., and others.

The New York State Association of Railway Surgeons holds its annual meating at the Academy of Medicine on same day—

The New York State Association of Railway Surgeons holds its annual meeting at the Academy of Medicine on same day — morning and afternoon session — to which all our members have been invited, and the members of that Society are cordially invited to attend our meeting and take part in the discussion.

For Section on Medico-Legal Surgery,
GRANVILLE P. CONN, M.D., Chairman.
CLARE BELL, Vice-Chairman and Secretary. GEORGE CHAFFEE, M.D., Treasurer.

For Medico-Legal Society,
H. W. MITCHELL, M.D., President.

CLARK BELL, Secretary. F. B. Downs, M.D., Assistant Secretary.

NEW YORK STATE ASSOCIATION OF RAILWAY SURGEONS.— The fourth annual meeting will be held in the Academy of Medicine, 17 West Forty-third Street, New York City, Thursday,

The fourth annual meeting will be held in the Academy of Medicine, 17 West Forty-third Street, New York City, Thursday, November 15, 1894.

Morning Session (9.30 A. M. sharp).—1. President's Address, "Important and Unsettled Questions in Railway Surgery."
2. When Shall we Amputate? (a) "Arguments Favoring Early Amputations." By Dr. W. L. Estes, Chief Surgeon Lehigh Valley, R. R., South Bethlehem, Penn. Discussion by Prof. J. B. Murdoch, Pittsburgh; Prof. J. S. Wright, Brooklyn; Prof. A. P. Grinnell, Burlington, Vt. (b) "Arguments Favoring Delayed Amputations," By Dr. T. H. Manley, Surgeon Harlem Hospital, New York. Discussion by Dr. C. M. Daniels, Buffialo; Prof. J. S. Wright, Brooklyn; Prof. A. P. Grinnell, Burlington, Vt.; Prof. J. B. Murdoch, Pittsburgh. (c) "Technique of Amputation." By Prof. John A. Wyeth, New York. 3. "Assepsiand Antisepsis in Surgical Work." By Dr. F. A. Stillings, Concord, N. H. Discussion opened by Prof. A. P. Grinnell.

Afternoon Session.— Business Meeting, 2 r. M. Scientific Work, 3 r. M. 4. "Special Features in Railway Surgery." By Dr. C. B. Herrick, Troy. Discussion opened by Dr. G. P. Conn, N. H. 5. "The Immediate Care of Railway Injuries." By Prof. J. A. Van Duyn, Syracuse. Discussion opened by Dr. Geo. Chaffee. 6. "Important Factors in Unusual Results Following Traumatisms." By Dr. R. S. Harnden, Waverly. Discussion by Dr. P. A. Skiff, Frankfort; Dr. C. S. Parkhill, Hornellsville.

M. CAVANA, M.D., President, Oneida.

J. B. Hewlitt, M.D., Secretary, Middletown

M. CAVANA, M.D., President, Oneida. J. B. HEWLITT, M.D., Secretary, Middletown.

MISSISSIFFI VALLEY MEDICAL ASSOCIATION.—The twentieth annual meeting of the Mississippi Valley Medical Association will occur al Hot Springs, Ark., November 20, 21, 22 and 23, 1894.

X. C. SCOTT, M.D., President, Cleveland. F. C. WOODBURN, M.D., Secretary, Indianapolis.

RECENT DEATH.

STUART DOUGLAS, M.D., died in New York on October 14, 1834, aged thirty-three years. He was a graduate of the University of Virginia and for seven years had had charge of the insane patients at Bellevue Hospital.

BOOKS AND PAMPHLETS RECEIVED.

Appendicitis: A Timely Operation. By Howard Crutcher, M.D., Chicago. Reprint. 1894.

Morphinism in Medical Men. The Modern and Humane Treatment of the Morphine Disease. By J. B. Mattison, M.D. Reprints. 1893-4.

At 8 o'clock P. M., precisely.

I. Session of the Medico-Legal Society, the President, H. W.
Mitchell, M.D., in the Chair: Election of new members and By Burnside Foster, M.D. Reprints. 1894.

Original Articles.

REMOVAL OF THE GASSERIAN GANGLION FOR FACIAL NEURALGIA: SUCCESSFUL CASE

BY MAURICE H. RICHARDSON, M.D., Visiting Surgeon to the Massachusetts General Hospital,

AND GEORGE L. WALTON, M.D.,

Physician to the Neurological Department, Massachusetts General
Hospital.

This branch of neurological surgery is of so recent date, and the number of reported cases so small (somewhat over forty, only) that each case is of sufficient importance to be reported. The dangers and difficulties of intra-cranial neurectomy are not yet fully understood, nor the results assured; nor, in fact, has the best method of operating on the ganglion in question been established, the advantages of entrance to the skull by the method of Rose (trephining at the base) being disputed by the advocates of the lateral operation (through the temporal bone), whether according to the so called Krause-Hartley method or that of Horsley.

The latter method was adopted in the following case because a clear view of the ganglion and its branches was deemed by the operator the most important consideration for intelligent and safe removal. The operation of Rose certainly involves, as Keen has commented, working more or less in the dark through a very small opening, thus adding not only to the difficulty of removing the parts desired, but also to the dangers of injury to, if not destruction of, contiguous important structures, notably the internal carotid artery, the cavernous sinus, and the ocular nerves. The middle meningeal artery can hardly be expected to escape injury by either method.

The operation was even more difficult than was anticipated, principally on account of hemorrhage, both arterial and venous, which could be controlled only by temporary gauze packing. The procedure was thus much delayed at the outset; indeed, complete postponement seemed unavoidable at one time, as in the case reported by Keen and Mitchell in which packing was left for three days in the cranial cavity before the

operation was resumed.

CASE. Mrs. S. C., aged sixty-three years, has suffered from severe facial neuralgia for about fifteen years. The onset was gradual, the attacks being at first of short duration, and with considerable intervals. Of late years the pain has been almost continuous. Confined at first to the lower jaw on the left side, pains have spread at times into the temple. infra- and supra-orbital regions have not been invaded. There has been no pain in the teeth, which are in remarkably good condition.

Three years before (June 26, 1891) Dr. Richardson had operated extra-cranially upon the second and third divisions of the fifth nerve on the left side by avulsion at their foramina of exit. A small elliptical incision was made in the left temporal region, with its convexity upwards. The zygoma was sawed through and turned down over the ascending ramus of the jaw with Without cutting the origin of the masseter muscle. the temporal muscle, the second and third divisions of the nerve were isolated, the one in front of and the scissors its proximal attachments, and finally to destroy other behind the temporal tendon. By alternately it by avulsion between the jaws of powerful forceps. dissecting and packing, anteriorly and posteriorly, a By this method the only cutting necessary is at the

isolation and avulsion. Immediate healing followed, with complete relief from pain. In the course of a year and a half the pain returned, and, on entrance to St. Margaret's on August 13, 1894, the spasms were unbearable.

The second operation was performed August 15, 94, Dr. Brewster assisting. The incision was made 1894, Dr. Brewster assisting. practically through the old scar. The squamous portion of the temporal bone was exposed, and a small trephine opening was made just posterior to the spheno-temporal suture. The skull proved to be very thin at this point, and in spite of every care the posterior branch of the middle meningeal artery was cut. The hemorrhage from this source was excessive, and could not be controlled; for some time after the removal of the trephine-button it seemed as if the operation must be temporarily abandoned. At last, after enlarging the opening, the vessel was secured. The dura mater was surprisingly thin; it was impossible, even with the greatest care, to save that portion situated directly under the trephine-button. In trying to separate it from the bone in the middle fossa the membrane was torn to shreds, though the slight force used was very carefully applied by means of blunt and smooth instruments. Such a result in trephining had never occurred in the experience of the operator. Indeed, in demonstrating the Gasserian ganglion in the dissecting room, it had been customary to expose the petrous bone and the middle fossa by tearing up roughly the dura mater. The strength of this membrane and the facility with which it may be separated from the bone was depended upon for easy and safe isolation of the ganglion.

The subsequent procedures, however, were much facilitated by going immediately into the sub-arachnoid space. The temporal lobe was lifted without difficulty by means of a spatula extemporized from a silver spoon, so that the whole length of the petrous bone could easily be seen and felt. The depression at the end of this bone, where the Gasserian ganglion is situated, could be clearly distinguished; and after the cessation of the hemorrhage the fifth nerve could be seen at the point where it leaves the dura mater to enter the ganglion. A good view could be obtained of the pons also. Having determined the exact situa-tion of the ganglion, the dura mater was incised along the anterior edge of the petrous bone, and through this incision the membrane was carefully lifted by means of the blunt dissector. On going back very cautiously and very gradually, the mass of the ganglion was soon reached.

The situation of the Gasserian ganglion at this point rendered cutting extremely dangerous. Not that one would be apt to injure the carotid, as it winds from the canal at the tip of the petrous bone around the bases of the clinoid processes, for its position is indicated by its strong pulsations; but there is very great danger of wounding the cavernous and other sinuses. thickness of the walls of these vessels, with the absence of pulsation, makes it impossible to distinguish them; hence one cannot cut in their vicinity without the greatest risk of wounding them. The safest way, therefore, of removing the ganglion is first to isolate it by means of blunt instruments, then to sever with clear view of the field was obtained for intelligent end towards the pons. In the sub-arachnoid operati

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the nerve can be seen distinctly, and there is no danger of wounding other structures by this cut. When performed entirely outside the dura the isolation of the proximal end can still be made so complete that cutting with the scissors is safe. For the purpose of avulsion, forceps without a tapering point are best, for the usual instruments, with conical ends, while being twisted allow the nerve to slip off the point.

In our case, after isolating the ganglion as well as possible by lifting the dura mater, the portion between the ganglion and the pons was cut with blunt-pointed scissors, and the main body was grasped by means of

forceps and avulsed.

With regard to the motor branches of the third division contiguous to the ganglion we think it impossible by any operation yet devised to destroy the ganglion without at the same time destroying this motor trunk. It was only with the greatest difficulty that the ganglion itself was isolated; to find and protect the motor portion would have been impossible,

except, perhaps, by the merest chance.

The amount of hemorrhage after avulsion was considerable, especially from a point near the anterior clinoid processes. By letting down into place the temporal lobe, this hemorrhage would cease; on lifting the brain again from the fossa, a rapid coze would show itself. The exact source of this hemorrhage could not be made out, but it was permanently checked by letting the brain down into place. The veins injured were not those referred to by Horsley, which pass from the temporo-sphenoidal lobe to the most liable to the intractable form of so-called epilepsuperior petrosal sinus.

The temporo-sphenoidal lobe was considerably lacerated superficially, in spite of every precaution. There were numerous spots of hemorrhage by which the cortex was altered in gross appearances, and several tears were visible at the close of the manipulations. The probable effect of this injury was anticipated with much interest, with special reference to

aphasia.

The hemorrhage was so extensive throughout the operation that it was not deemed safe to leave the wound without drainage, though at the close the parts were dry. A small strand of gauze was therefore left in one angle of the wound extending into the middle fossa.

History after Operation .- Convalescence was perfectly normal. The stitches were removed on the sixth day. There was solid primary union. The most noticeable symptom on coming out of ether was aphasia, of which the following will serve as examples: "My coffee is not wet." "Can't you soften that pill?" meaning "loosen that bandage." "My head is all well and gone home; why can't I go?" "Can't you whistle my head?"

She wanted her coffee "dry," and an apple "salt." She called her "back" her "Baptist," and called "egg-nogg" "cake-stuff." This symptom improved on the third day, and in five days it practically disappeared. There was no headache or other special symp-The temperature did not rise at any time above 99.5°. Examination two weeks after operation showed the following condition:

Speech is practically perfect, patient only occasionally forgetting a name; not oftener perhaps than the average person: for example, she called Dr. Charles "Dr. Richardson"; then corrected herself. Patient thinks she does not remember quite as well, and that the deep, and the extra-cranial methods.

she is not quite as bright as before the operation; but this is not noticeable to the observer. There is numbness in the distribution of the branches of the fifth nerve, including the forehead and conjunctiva. The pupils are alike, but the left does not react quite as freely as the right. There is slight haziness of the left cornea (which existed before the operation) and moderate injection of conjunctival vessels of the left The jaw opens fairly, nearly admitting two fingers. The forehead is smooth on the left (as before operation). The eye is closed partially; the lid is somewhat swollen and drooping. The wound is completely healed. The month is somewhat asymmetrical, but all movements of the lips are perfect. The movements of the eyes are unaffected.

The patient has had no pain since the operation.

Long-standing cases of trifacial neuralgia, especially in elderly people, prove so often intractable to other than operative therapeutics, that the tendency is growing to operate comparatively early in these cases rather than to prolong the suffering through years of unsuccessful attempts at subduing the affection by drugs.

The long course of this nerve through unyielding canals and around bony prominences, with the fact that it is exposed (through supplying the teeth) as no other nerve in the body, to external influences, adds materially to the usual causes of neuralgia, and renders this nerve peculiarly prone to irritation and disease. The second and third branches are those tiform neuralgia. Internal and dental treatment failing in these cases, the final resort is removal.

Operations on the more accessible parts of these branches prove so often only temporary that it is a question if it be not justifiable to advise the deeper operations at once in cases sufficiently severe to justify operation at all; and thus avoid the discomfort of two attempts, and the suffering attendant upon long

Yet when we consider the great ease with which an offending nerve may be removed at its peripheral point of exit — the infraorbital or the mental foramina, for example, with its usual complete relief, even though it be for a year only, it seems at times worth while to perform this operation first, especially in elderly or feeble patients, reserving the deep extracranial operations and the removal of the ganglion until they are absolutely the last resort. Peripheral operations upon these nerves in our experience have been followed almost invariably by recurrence of pain. We have then advised the deep operation upon the second and third divisions at the base of the skull; in many of these cases the pain has not returned, or its recurrence has been controlled by medical therapeutics. In others, thus far small in number, the neuralgia has recurred with its original violence. For such the avulsion of the Gasserian ganglion remains as a last resort.

In considering, therefore, what operation to choose in the beginning, we must bear in mind that the final operation of all — the one under discussion — has not as yet had time enough to show its results, though perhaps sufficient to give more brilliant promise than the. others. If it should prove to be like the others, temporary only, it is evident that the greatest relief will be found in resorting successively to the peripheral,

The objection to proceeding at once to the removal of the Gasserian ganglion, however, is obvious,—for, apart from the difficulties and dangers of this operation, involving entrance within the cranium and opening the dura mater, we have to consider the probable injury to, and even loss of, the eye, through destruction of the first branch of the nerve. In point of fact this operation, without previous pheripheral operations, has been resorted to a few times only (for example, by Tiffany in a noteworthy case on a woman of seventy-nine, and by Finney in an operation upon a male of sixty-nine). Keen's views on this point are that if we can lessen the mortality and if we can demonstrate that no recurrence takes place, operation upon the Gasserian ganglion should be the first recommended; otherwise the last. Up to this time recurrence has not been reported, as far as we have seen, and the chances are certainly in favor of lessening rather than increasing the death-rate.

With regard to ocular injury, a study of the literature shows far less involvement of this organ than would be expected, perhaps because the first branch and part of the ganglion are often left either intentionally or on account of difficulty of detachment from the cavernous sinus. Tiffany, who has had no ocular trouble in his cases, specially recommends leaving these portions intact. The only case of absolute loss of the eye seems to have been one of Rose, in which panophthalmitis followed operation. Less marked affections have occurred, as in Lanphear's case of suppurative conjunctivitis, allayed by mild bichloride solution.

In our case the patient was willing, on account of the extreme pain, to undertake the operation, though warned of the possibility of losing the sight in the eye on the affected side.

The operation advocated and successfully practised by Rose, has been that adopted in about half the cases reported - Rose (6), D'Antona, Andrews, Park, Lanphear, Doyen, Parkhill, Kerr, Novarro, Eskridge and Baker; and in about half, the so-called Krause-Hartlev cut has been made - Krause, Hartley, Roberts, McBurney, Fowler, Tiffany, Finney, Mitchell and Keen. Mr. Horsley undertook in one case removal through a trephine opening in the temporal region, elevation of the brain, after cutting through the dura mater, and detachment of the root from the pons.¹ In this case the patient (already in poor condition) died of shock in seven hours, a fact which, with theoretical objections advanced by Rose, seems to have deterred surgeons from following Horsley's method, the Krause-Hartley method being preferred by those opening through the temporal region. The method followed in the operation here reported, however, was practically that of Horsley.

The steps of Rose's operation in brief are:

- (1) Incision from over malar bone, half an inch below external angular process along the zygoma; down in front of the ear over the parotid region to the angle of the jaw; then along the lower border of the horizontal ramus to the facial artery; the flap sutured to the upper part of the chin by catgut.
 - (2) Section of zygoma and coronoid processes and detachment of masseter and temporal muscles.
 - (3) Exposure of the base of the skull and search for foramen ovale.
 - (4) Opening the base of the skull.
 - (5) Removal of the ganglion.
 - ¹ For details see Brit. Med. Journ., Dec. 5, 1891.

(6) Reposition of displaced structures.3

The Krause-Hartley operation is made through an omega-shaped incision from in front of the tragus to the external angular process of the frontal bone, the cut being carried to the bone, and continued through it by the chisel, the bone being broken off at the base just above the zygoma. The second and third branches are found and divided, and the ganglion destroyed as far as possible.

Rose's objections to Horsley's operation in brief are: (1) The difficulty of the operation; (2) The double opening of the dura mater; (3) the removal of bone; (4) the disfigurement; (5) the injury to the brain; and (6) intra-cranial hemorrhage, for example, from the veins passing from the sphenotemporal lobes to the superior petrosal sinus (which Horsley himself states must be ruptured) and from

probable injury to the sinus itself.

A consideration of these objections shows that the difficulty of operation and the danger of hemorrhage are by no means wanting in Rose's method. The removal of bone and the disfigurement are inconsiderable objections in comparison to the seriousness of the symptom for which the operation is undertaken (in point of fact, the disfigurement is by no means necessarily great). The danger of the double opening into the dura mater, under antiseptic precautions, and in a fair field of operation, would seem counterbalanced by the dangers from curetting and removing the ganglion in pieces without a clear view of a region filled with vital structures. The injury to the brain is hardly likely to extend beyond the speech centres, which experience has proved will bear a great amount of pressure, and even laceration, with only temporary impairment of function.

That contiguous structures may be injured in curetting is shown by the oculo-motor paralysis (tempo-

rary, it is true) in Andrews's case.

The danger of injury to the closely lying internal carotid is common to both operations, but probably lessened in the lateral operation on account of the better view of the parts. The danger of injuring the cavernous sinus through its attachments to the first branch is also common to both, and the suggestion of Rose might perhaps be followed with advantage, that is, to avoid removal of this branch, though Horsley states that he has been able to separate these structures in the cadaver.

Among the advantages of the lateral operation may be mentioned the fact that the mobility of the jaw is retained; that the zygoma need not be removed; that the ganglion can be perfectly exposed and removed, including its root on emerging from the pons; that the danger, however great, of injury to important contiguous structures is minimized; and lastly, that we avoid the danger of sepsis from the pharynx.

With regard to the prognosis, Keen's table, collected early in 1894, shows six deaths out of forty cases, nineteen of which were operated upon by Rose's, and nineteen by Hartley's method. Two deaths are credited to each method. One of the other deaths was Horsley's case, and one of unknown method. A death reported by Eskridge (a male of fifty-two, Rose's method) is not mentioned in Keen's table.

In persons of fairly good condition and without

² Full details are found in the Laucet, 1892, page 295.

³ The details will be found in Hartley's report in the Annals of Surgery, May, 1893, page 511.



other disease, it would probably not be far out of the way to expect a mortality not exceeding ten per cent., though the actual death-rate has been higher.

Certain valuable measurements have been made by Taylor, which are worthy of inserting at length to show the variations to be expected in the situation of the foramina and the contiguity of the carotid artery. Distance from the middle of the foramen ovale to the middle of the foramen spinosum, 3 to 13 millimetres; ovale to rotundum, 9 to 18; spinosum to rotundum, 11 to 24; ovale is anterior to foramen spinosum by 3 to 9 millimetres; internal to it by 3 to 9 millimetres; the foramen rotundum is anterior to the foramen spinosum by 13 to 20 millimetres; internal to it by 6 to 16 millimetres. The foramen rotundum is distant from the fossa for the Gasserian ganglion by 11 to 23 millimetres; the foramen ovale is distant from the same by 3 to 13 millimetres. The distance from the foramen ovale to the carotid canal varies from 1 to 13 millimetres. The diameter of the foramen spinosum is 1 to 4 millimetres; of the foramen ovale, 4 to 9 millimetres; of the foramen rotundum, 1 to 4 millimetres.

An important point to be noted is the occasional contiguity of the carotid canal to the foramen ovale; also the fact that the middle meningeal artery is in some cases so placed as to render it impossible to remove the third branch without injuring it, on which account Taylor recommends tying the middle meningeal artery at once in case the nerve proves difficult of access.

A noteworthy peculiarity from the neurological point of view is the persistence of taste at the tip of the tongue after these operations, a fact hard to reconcile with our views of the course of the taste fibres through the trigeminus.

No trophic changes occur in the skin of the face, and the area of anesthesia becomes greatly narrowed in time. The paralysis of muscles of mastication affords some discomfort, though not material, compared with pain, and one who performs or sees this operation will appreciate the impossibility of isolating and sparing the motor root.

Temporary aphasia may be expected in lateral operations, and temporary injury to the ocular nerve may occur in all (perhaps less in the lateral), but if the patient survives the immediate effect of the shock and compression upon the respiratory centres, the chances are against any lasting injury to the brain.

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ACUTE INFANTILE ARTHRITIS IN THE HIP. 1 BY AUGUSTUS THORNDIRE, M.D.

A CASE OF ACUTE ARTHRITIS.

J. C., age fourteen months, was brought to the Children's Hospital May 9, 1893, where he was seen by Dr. R. W. Lovett and myself. His condition was as follows:

Small child with pinched and wasted expression of countenance, much emaciated; the left thigh, semiflexed, was fluctuant and swollen to twice its usual size from the knee to the crest of the ilium. The lower half of the abdomen was quite prominent and the skin reddened. The tenderness was so excessive that the least handling caused great pain. The mother said that two weeks before there had been some pains in the stomach, and a doctor had been summoned; that these had been partially relieved, but that three days ago the child was in pain and another physician had been called, who discovered a deep-seated swelling about the hip and advised immediate removal to the hospital, but that yesterday she was not able to come and the pain and swelling had grown rapidly worse; that for two days he had not nursed much, but there had been no vomiting and the napkins were of good color.

The child was at once sent to the West End Infant Hospital and Nursery where, at Dr. Lovett's request, I opened the abscess two hours later. The patient, wrapped in sterilized towels, was slightly etherized on the sterilized metal operating-table, which was warmed by hot-water tins. An incision three inches long behind the trochanter immediately opened a tense sac of milky, odorless pus. Exploring it with the finger, it was found to extend from the knee to the crest of the ilium behind, while in front I easily passed over the ramus of the pubis, one inch outside of the symphysis, into a cavity whose limits my finger was too short to explore, but a quantity of pus was pressed out by the It was irrigated with warm hand on the abdomen. corrosive-sublimate solution, 1 to 5,000, then with warm boiled water; and two rubber drainage-tubes were inserted, one running into the pelvis, the other down the outer side of the thigh. Sterilized gauze dressings were applied, together with a Cabot posterior wire frame from the ankle to the scapulæ. As the pulse was 160 and far from strong, the operation was done as quickly as possible, and two subcutaneous injections of brandy were given. The child slept fairly well. Mother and child went home six days after the operation, the patient's temperature never

¹ Read before the Boston Society for Medical Improvement, April 23, 1894.

having passed above 99.5°; and three weeks later the resulting sinus had entirely closed and the child ap-

peared to be perfectly healthy.

I have so far omitted saying anything of the condition of the hip. When the examining finger explored the abscess, the femur was lying in a sea of pus, and gave the sensation of being free from attachments at its upper extremity. Upon rapid examination the head and neck of the femur were found lying on the dorsum of the ilium, and a shallow cavity filled with soft granulations occupied the spot where the acetabulum ought to be. In the centre of these granulations I thought I could feel a perforation. I attempted to put the head of the bone back in place and thought I had succeeded, but at the next dressing it was out of joint. On the second day, under ether, Dr. Lovett and I endeavored in vain to reduce the dislocation for the second time. The head could be brought into the shallow acetabulum without difficulty, but it would not stay there, and after two or three attempts we again irrigated with hot corrosive-sublimate solution (1 to 5,000) followed by warm sterilized water, and applied dressings and splints as before, leaving the hip dislocated on the dorsum ilii. This, I believe, is not an uncommon result in acute arthritis of the hip.

On October 11th of the same year the parents had begged for an operation, and brought him to the same hospital by appointment. Since discharge, five months

ago, the condition has been as follows:

The sinus had closed entirely in three weeks. In September he had been very ill for two weeks with gastro-intestinal catarrh, and he still had occasional spells of vomiting and diarrhea. He was still nursing. The condition of the affected limb was this: trochanter three-fourths of an inch above Nelaton's line, actual shortening one and a quarter inches; toes could not be everted; dislocation of left hip on the dorsum ilii; a depressed scar two and a half inches long was adherent to the posterior surface of the great trochanter.

Operation under ether, Dr. Lovett manipulating the leg; Drs. Munro and Dane present. An incision four inches long was made, following the old scar to the bone. The hip was thrown well out of the wound by flexing and adducting. The acetabulum was felt to be small, shallow, and filled with a tough elasticfeeling tissue and some bony spiculæ. The large, sharp-edged spoon-curette was used with considerable force until a fair-sized cavity was obtained. I could not get the head of the bone into it; and then found a finger-like spur of bone projecting from the lower border of the femoral neck, and curving upwards so as to cover the lower half of the articular surface of the head of the femur. This was easily cut off with boneforceps, and the dislocation reduced. It was irrigated with bichloride solution (1 to 5,000), then with boiled water, and sewed with catgut, except at the lower angle where a small iodoform gauze wick was inserted. Steam-sterilized dressings and a long Cabot hip-frame, projecting five inches beyond the foot, were applied, with light traction to the leg, obtained by tying the traction webbings tightly under the projecting foot-piece and using two perineal straps for counter-extension. Before applying the dressings, Dr. Lovett drove a large wire nail into the pelvis, just above the head of the femur, the free end remaining in the dressing. On the second day the dressing was done because the temperature had slowly risen to 102°.

The nail, although firmly driven in only two days before, was loose, and was removed. It was covered with a clear, sticky fluid like mucilage, and a few drops of clear serum followed from the nail-hole. The gauze wick was loosened with dressing-forceps, but not removed.

The temperature fell steadily (in forty-eight hours was 99°), and remained normal. The child was sent to its home in East Boston on the ninth day, and I continued to dress it twice a week for three weeks. after which the parents dressed a small granulating surface, bringing the child to see me every fortnight. The Cabot splint was worn four months; there was then some motion in the hip, and the legs were of equal length. Traction had been kept up. He then wore a light traction-splint made of steel tubing, and was allowed to play for a half-hour every day without his The present condition of the hip, six months after my second operation, is this: Child stands with the left foot somewhat everted, and limps a little in walking. He is still unsteady in stepping, although now a little over two years old. No actual shortening is present. Motion in flexion is about 25°; abduction, adduction and rotation are slightly limited. Hyper-extension is also limited.

TREATMENT.

The treatment of acute arthritis resolves itself into two things: (1) that directed against the general septicemia; feeding and stimulating, including both alcohol and cardiac stimulants; and (2) the local treatment, rest, free incisions, disinfection, and drainage of

any and all pus cavities.

The acute general sepsis is generally present before it is possible to know that there is pus in the joint. At this stage, feeding at absolutely regular and proper intervals must be insisted on, the mother's milk being, of course, the best food for small babies. I have given brandy, ten drops every two hours, and one drop of tinct. digitalis in the alternate doses, to babies as young as two months, after an operation; and there is every reason to push both the food and stimulant from the very beginning in these cases. The local treatment must include rest of the painful hip before as well as after the operation; the Cabot frame affords good fixation, and allows inspection of the limbs, which a plaster bandage does not do, although the latter method has been used, as also extension in bed on an inclined plane. The Cabot frame, if properly guarded with rubber tubing and rubber cloth or oiled silk, is also preferable after operation, on account of the frequent soaking of a plaster spica with urine. The limb should in the early days be put up in a comfortable position, usually semi-flexed. soon as cellulitis or great tenderness in the tissues about the joint gives rise to a fair presumption that there is pus, a free incision should be made (preferably following one of the lines for excision of the hip) and the capsule opened; and should no pus be found, it does no harm to look for it by deep incisions into the cartilaginous epiphysis. If, however, large abscesses are found, the cavities, according to Gibney,2 should be carefully curetted and disinfected; and this should always be done unless the baby's condition is bad enough to make great haste necessary.

After reducing a dislocation of the hip, the leg should be dressed on a straight Cabot frame, or a long

² New York Medical Record, 1892, vol. xlii, p. 505.

plaster spica bandage may be applied. A moderate amount of extension is advisable, as it assists in keeping a baby's hip at rest.

Stimulants I believe are usually required, but no rule can be definitely laid down for their use. Every precaution should be taken during the operation to avoid shock.

This case is instructive in that it shows that if a child gets well with a dislocated hip, the dislocation may be reduced at least five months after evacuating the abscess, and, furthermore, that if after careful and persistent trial it cannot be reduced by the Bigelow method, operation may show some exostosis or deformity, and its removal enable the operator to effect the reduction.

GENERAL CONSIDERATIONS.

Acute infantile arthritis is fortunately an uncommon affection, judging from the number of reported cases. It has nevertheless met with the misfortune of being described by many writers under different names. To-day it represents a group of cases characterized by a very acute infectious inflammation of the end of one of the long bones with rapid suppuration of the joint. It occurs in infants with but few exceptions. It may be monoarticular or polyarticular. It is supposed to begin with a passive congestion of the vessels about the epiphyseal line, rapidly followed by inflammation and suppuration causing abscess of the epiphysis speedily breaking into the joint; or joint-suppuration may be found without the epiphyseal abscess.

Mr. Thomas Smith, who gave us the first clear description of the infection, notes a small hole leading through the cavity in the epiphysis into the joint in many specimens. Such an abscess once started may lead to entire destruction of the articular end of the bone, or even to necrosis of most of the shaft as well. There may or may not be a sequestrum; grating in the joint may be present. Motion in the joint may be much increased owing to a flail-like condition or owing to pathological dislocation of the joint, but joint motion is of course extremely painful at first if not prevented by spasm of the surrounding muscles. After the pus bursts through the capsular ligament, the surrounding parts become the seat of a rapidly spreading abscess, which may break externally, or be opened, drained, and get well. This fortunate result is, however, rare. Over fifty per cent. of all cases reported are fatal from septic infection and exhaustion, whether operated or After recovery the child grows up with a shortened limb and either a flail-joint or a dislocated one. Anchylosis may result but it is rare.

Among the diseases of bone none have attracted more attention of late years than osteomyelitis; it is not surprising to find a number of these cases described under that designation. The infection, in fact, begins as a local osteomyelitis with resulting suppuration in the joint.4

The term acute arthritis was, I believe, first used by J. T. La Terrisse.⁵ In his inaugural thesis in 1833, he describes three cases, aged three, six and nine days, respectively, all of whom showed at autopsy pus in several joints, and one also had small abscesses in the lung. In 1874 Mr. Thomas Smith, in the paper

already alluded to, reported twenty-one cases which had come under his own observation. Both of these writers made use of the term acute arthritis.

Among the earlier German writers, Klose, because the suppuration generally occurred between the epiphysis and shaft, named it "epiphysentrenung" (separation of the epiphysis) and also osteomeningophlebitis. Chassaignac called it acute sub-periosteal abscess; Demme, of Berne, osteomyelitis; and recent French writers, like Lannelongue, Achard, Rodet, Courmont and Jaboulet, continue to use this designa-

Krause in 1884, in an article on "Acute Purulent Synovitis in Infants," describes the affection, and says that Volkmann has seen about fifty cases, and calls it catarrhal inflammation of the joints in infants. Krause found in the pus the staphylococcus pyogenes aureus which Rosenbach then considered causative of osteomyelitis and also a chain coccus.

Stromeyer 9 had already among the Germans christened it osteitis articularis peracuta; and Barwell "Diseases of Joints," American edition, 1881) used his terms and definitions.

McNamara at first called it acute epiphysitis, but in later editions terms it suppurative osteitis of growing bones, mentioning four or five cases. Thomas Jones, of London ("Diseases of Bones," 1887), dubs it acute osteomyelitis, or necrosis of the epiphysis and articular extremities of bones, as does also Sir William Morant Baker. 10 Among recent American writers and some English the name acute arthritis is usually retained — such as Howard Marsh, Owen,11 Battles,12 Townsend, Gibney, Judson,18 Roswell Park, Bradford and Lovett; 14 but Koplik and Van Arsdale 15 of New York speak of the affection as a streptococcal osteomyelitis, and some prefer the term epiphysitis.

Owen 16 has recently called attention to the fact that all cases of acute arthritis are merely manifestations of acute osteomyelitis and claims that there is no need of such classification. "It is not a joint disease, nor is it an epiphysitis. Perhaps the best term is para-epiphysitis.'

Townsend, of New York, compiled in tabular form, in 1890, all cases he could find, including his own. They numbered 71, and of these 37 (52 per cent.) involved the hip-joint, showing that it is infected more frequently than any of the other joints. The ages, recorded in all but five cases, may be grouped as follows: 15 (or 47 per cent.) occurred in infants under two months of age; 5 (15½ per cent.) between two and six months; 8 (25 per cent.) between six months and one year; and the 4 last (121 per cent.) between one year and eighteen months. These figures, derived from the hip cases alone, do not differ materially from the summary of the entire table. A large proportion, 25 per cent., were under one month of age; and boys and girls were affected almost equally.

Mr. G. A. Wright, 17 of Manchester, England, says he has seen a case which originated in utero.

St. Bartholomew Hospital Reports, vol. x, 1874.
 Howard Marsh: Diseases of Joints, Edition 1886.
 Observations d'Arthrites aignës chez l'Enfant nouveau-né, etc. Thèse, etc., Paris, 1833.

⁶ Townsend: Acute Arthritis of Infants. American Journal of Medical Sciences, vol. xcix, p. 1.
7 Bull. Méd. de Paris, 1890, vol. iv, p. 183.
8 Lyon Médicale, 1890, vol. lxiii, p. 513.
9 Townsend: Loc. cit., p. 2.
10 British Médical Journal, September 1, 1883.
11 Sir Edmund Owen: Surgical Diseases of Children.
13 Battles: Lancet, 1891, vol. i, p. 1042.
13 New York Medical Journal, December, 1878.
14 Treatise on Orthopedic Surgery, Edition 1890.
15 American Journal of Medical Sciences, 1892, vol. ciii, pp. 422, 534.
16 Lancet, 1893.

Lancet, 1693.
 British Medical Journal, September 1, 1883, p. 422.

from the purulent joint diseases of later life, is it not probable that they may be due to anatomical conditions not existing at an older age.?

(To be continued.)

SOME OBSERVATIONS ON CHRONIC VESIC-ULITIS, WITH REPORT OF FOUR CASES.

BY J. M. THOMPSON, A.B., M.D., BOSTON.

WITHIN the past few months a not inconsiderable amount of attention has been paid to inflammation of the seminal vesicles; and among the comparatively small number of writers upon the subject must be mentioned the name of Dr. Eugene Fuller of New York, whose recent contributions in this particular field of genito-urinary literature have undoubtedly proved of greatest interest.

It seems noticeably strange that in such commonly occurring lesions as those of the sexual organs, all the works pertaining to the subject should have either disregarded diseases of the vesicles as of minor importance, or, as it would appear, have been loth to pin faith on any form of treatment tending to an alleviation of their most self-evident symptoms and disastrous results.

In view of the facts, it is safe to assume that vesiculitis has been regarded in the light of a necessarily accompanying symptom of certain forms of posterior urethritis, or perhaps of prostatitis, and to separate it from the latter as a disease entirely distinct in itself is a matter of no grave concern. Yet, notwithstanding all this, we have come to look upon vesiculitis as something more than a symptom — as something more than a mere form of neurasthenia existing principally in the mind of the patient. It cannot be denied, however, that the nervous phenomena associated with diseases of the male generative organs are unreasonably prominent, more especially when the sexual vigor has begun to be impaired; but, inasmuch as this is the case (and perhaps always will be), we are the more obliged to seek some means afforded for the relief of such phenomena. To that end it is highly important that a positive diagnosis be made of what to my mind is the essential factor in causing impairment — and sometimes loss — of sexual vigor, namely, seminal vesiculitis; and, what is no less important, to find the proper and most efficient means at our disposal for checking and removing that cause.

The method that is now being suggested, and the one adopted by the writer in such cases is called "stripping," another name for massage (though not strictly speaking), a term that will serve admirably to convey a clearer notion of what is meant to the mind

Thus far, unfortunately, my experience with the method has been somewhat limited; yet I feel safe in asserting that it is the treatment par excellence for all simple inflammations of the vesicles, except where there is a tubercular, or possibly syphilitic, element present, in which latter cases, of course, specific measures would be more appropriately indicated.

Before entering upon a description of the treatment, it will not be out of place to give a clinical picture of a fairly typical case of seminal vesiculitis:

First of all, the patient generally, though not always, gives a history of chronic urethral discharge

As these cases in young babies differ materially lasting from a few months to several years, and for which every known remedy almost has been tried and found wanting. His neurasthenic symptoms are quite pronounced. He tells you that he notices an escape of semen during micturition, and very frequently while at stool. At times he experiences some difficulty in passing urine, and has a sensation of fulness and discomfort about the bladder and rectum. He is alarmed about losing his sexual vigor, and has frequent nocturnal emissions. In short, you find him a picture of mental depression and of general nervous Physical examination reveals a someimpairment. what shrunken, anemic penis; there is a varying degree of prostatic hyperesthesia, with some or no enlargement, while one or both vesicles are enlarged, indurated and tender, and the peri-vesicular tissues in cases of long standing are flabby and redundant. discharge is generally a gelatinous, semen-like fluid, and if examined microscopically, will be found to contain pus, mucus, deep urethral cells and dead sperma-

> During treatment the patient stands, and, bending forward, assumes a position similar to that taken in the game of "leap frog," while the operator, sitting on a chair behind him, passes into the rectum the forefinger of the hand corresponding to the vesicle that is to be stripped. At first, considerable difficulty may be experienced in reaching the vesicles; but if firm, steady pressure is used with the other three fingers against the buttock in the direction of the rectum, and at the same time the knee presses the elbow inward and upward, a vast amount of advantage can be gained. The arm not in use may be passed around the patient's thighs and thus - if nothing more some support obtained.

> By following these suggestions, the vesicles may be easily stroked for a few minutes without any discomfort to the patient. During this manœuvre, it is well to have a glass slide or other receptacle under the meatus in order to catch whatever escapes, and as a means of obtaining fresh material for examination.

> This treatment is repeated every five to seven days according to the effect produced. It has been my custom in those cases where much relaxation of the parts is present to suggest copious rectal douches of cold water daily as an efficient adjuvant to the stripping. These can be taken either with a recurrent nozzle similar in construction to Kiefer's urethal nozzle, or with what serves the purpose equally well, the ordinary bulb syringe, in which case the patient retains in a recumbent position a few ounces of the water.

> The treatment of stripping for inflammation of the seminal vesicles is as yet in its infancy, and naturally, one must be guarded in making statements too positive as to its general efficiency; however, my experience warrants me in stating that it will be difficult to find another method that is so cheerfully accepted by the patient, or one that is likely to have such a wholesome effect upon his mental condition - a factor of no trivial significance, and, undoubtedly, one of the most stubborn to relieve.

> It is needless to add that the patient must abstain assiduously from alcoholic and venereal excesses, pay strict attention to diet and hygiene, and have firmly impressed in his mind the truth of that old adage, Mens sana in corpore sano.

The following are the only cases of which anything

like a complete or satisfactory history can be given. It is hoped that in another paper more varied and

interesting cases may be reported:

Case I. Thirty-two years old; had gouorrhea several years ago. Habits generally temperate, except that he has indulged excessively in sexual intercourse for the past two years. During the last nine months has noticed some increasing difficulty during micturition, accompanied by an uncomfortable feeling about the rectum and bladder. There has been a constant discharge from the urethra for the last four months, and an entire absence of erection. Patient's nervous system was extremely debilitated, mental depression markedly pronounced. His sleep has been generally disturbed and nocturnal emissions frequent. The discharge appeared muco-purulent and contained pus, mucus and dead spermatozoa; while the urine was heavily charged with amorphous urates. The urethra was explored, and nothing found sufficient to cause such a profuse discharge. The deep urethra, however, was very sensitive, even the passing of a flexible bougie being almost unbearable. On rectal examination, the vesicles proved to be the seat of the trouble. Both of them were slightly enlarged and tender to touch, while the prostate remained intact. Cold steel sounds were passed about every fifth day for a few weeks, but although they had a salutary effect upon the nervous system, they did not seem to affect the discharge. The prognosis looked unfavorable till gentle stripping was tried. After the first sitting, a diminution in the amount and character of the discharge was noticeable. After three months' treatment the discharge was absent, the urine normal in every way, and the nervous system remarkably improved. The patient was advised to spend the summer in the country, and when last heard from, considered himself in good vigorous condition.

Case II. Thirty-two years old, remarkably strong, muscular and well developed. First attack of gonorrhea was in 1879. Since that time has had several other attacks, two of which were complicated with double epididymitis. For the last fifteen years has indulged at times in alcoholic and venereal excesses, even to the extent of occasional debauches. Beside a progressive decline in sexual vigor for the past eight months, there has been present a thin, milky discharge - very profuse when at stool and after excesses. There was no disturbance during micturition. Strange to relate, in connection with these symptoms, the patient had all the characteristic symptoms of tapeworm, of which he was quite unawares. The penis was very small and shrunken. There was a balanic hypospadias, but nothing in the urethra to account for his condition. Examination per rectum showed the vesicles to be moderately enlarged and very slightly tender, while the peri-vesicular region was flabby. Pressure on the vesicles ejected about a teaspoonful of fluid, which contained pus, caudate epithelium, mucus, some live and many dead spermatozoa. It was thought advisable to get rid of the tenia before proceeding to the stripping. Accordingly the patient was ordered a vermifuge, which did its work in every way satisfactorily. In a week the patient came back relieved both in mind and body, but his discharge was still present and no change had been observed in his sexual vigor. Stripping was now begun, and continued every week for two months sill the discharge had strumous diathesis may be lurking in the background entirely ceased, and sexual vigor improved.

examination for spermatozoa has been made recently; but without doubt, if the patient continues to lead a temperate life, his quondam vigor will be partly restored. Despite his age and excellent physical condition, I question very seriously, in view of his history, whether he can ever possess potent sexual organs.

Case III. Forty-eight years old; married in 1878. During the first two years of married life two wellnourished children were born. For the last fourteen years has not lived with his wife, but has been during this period a victim of self-abuse. He had never had venereal disease. Eleven years ago noticed a decline in sexual vigor. At his first visit, four months ago, he complained of entire absence of erection and a constant urethral discharge. Great difficulty has been found recently in starting the flow of urine, which is always turbid and milky and accompanied with more or less pain and tenesmus. At times during the past seven years has been treated with various balsamic preparations, tonics and injections, but only to find himself no better, and sometimes worse, after using them. On physical examination the penis and scrotum appeared shrunken and anemic. Both vesicles, as well as the prostate, were found tender, enlarged and very sensitive. The urine was very cloudy and contained clumps and shreds, while the patient, though strong and robust, was extremely nervous. The first stripping resulted in forcing through the urethra a teaspoonful of a sticky, muco-purulent fluid containing pus, epithelial cells and countless dead spermatozoa. Stripping was continued every seven days for four months, till the discharge ceased and occasional erections took place. The urine is now clear and no difficulty is experienced in voiding it. When last seen the patient was satisfied that considerable improvement had taken place, in short, he stated that he was about well. Considering the patient's age and history, it seems doubtful if his potency will return permanently; yet extreme satisfaction is felt when he tells me that he is " cured."

CASE IV. Forty-six years of age, contracted gonorrhea eleven years ago, of which he was entirely relieved. Up to within a short time has been a victim of self-abuse, although in other respects a man of good habits. At the time of his first visit — six months ago - he complained of "losing semen constantly," more especially when at stool and during micturition. Seminal emissions were frequent, and his occasional erections were never permanent enough to allow coitus. Nothing was found in the urethra except prostatic hyperesthesia, almost bordering on pain when an exploratory instrument was used. In this case the left vesicle was found to be enlarged and tender, the prostate was also slightly enlarged, while the entire peri-vesicular area was very sensitive, a little pressure giving rise to much pain. The urine was generally only slightly turbid, but at times very opaque. The discharge contained little pus, mucus, dead spermatozoa and deep urethral cells. The patient was much debilitated, and very frequently became unequal to his work, though not laborious, on Very gentle stripaccount of nervous exhaustion. ping was given and carried out till the discharge was nil. Though considerable improvement has taken place in the patient's general condition, and he feels very much encouraged at the result, still I fear that a No and will manifest itself later.

lowing conclusions:

- (1) The common causes of vesiculitis are sexual excesses and indiscretions.
- (2) Chronic urethral discharge in a certain number of cases can be traced to an inflammation of the seminal vesicles.
- (3) When chronic urethral discharge is present, independent of a venereal history, it is usually the result of seminal vesiculitis.
- (4) The diagnostic symptoms of seminal vesiculitis are impaired sexual function, intermittent or constant urethral discharge (and when not present can be ejected by stripping the vesicles) containing pus, mucus, deep urethral cells, and spermatozoa — usually
- (5) The disease yields very satisfactorily to the treatment of stripping, which should be employed about every five to seven days, and continued according to the effect produced till the symptoms have disappeared.

(6) In every case of persistent urethral discharge I would recommend examination of the patient per rectum, and especially in the cases of so-called "spermatorrhea and impotency of the sexual organs."

- (7) In the vast majority of cases of simple inflammation of the vesicles, the prognosis appears to be favorable, provided the patient adheres strictly to treatment.
- (8) At the present writing, nothing further can be stated concerning tubercular inflammation of the vesicles than that it is aggravated rather than relieved by stripping, and the prognosis appears unfavorable.

SOME EXPERIENCES WITH ASIATIC CHOLERA IN ASIA.

BY M. A. JEWETT, M.D., United States Consul, Sivas, Turkey.

THE epidemic of cholera at Sivas, Asia Minor, seems to me to offer some points of sufficient interest to be reported.

The special points to which I would call attention are: the altitude of the place where the epidemic occurred, the manner of its dissemination, and the comparative immunity of the people under conditions most favorable for the disease.

The city of Sivas is situated on a small plateau surrounded by mountains, on the northern border of the Anti-Taurus range. It is about 5,000 feet above the sea-level. According to the general statistics of the disease this altitude should be sufficient to make Sivas safe from an epidemic of cholera; and it is true that, while cholera has frequently visited Turkey in recent years, Sivas has escaped during the past halfcentury.

It is probable that during the months of February and March there were cases of cholera here; but the cases were few, scattered, and the diagnosis was somewhat uncertain.

I think that the disease was imported from Constantinople. At least the march of cholera from Constantinople towards Sivas can be traced from town to town up to eight hours' distance (caravan time) from here.

From the foregoing can be briefly drawn the fol- of the city. Situated on the banks of this river, about a mile from the city, is the village of Tavra. It has a population of about 1,000 persons. All the sewage of the village flows into the river.

> On the 12th of April about twenty women came from Tavra to a Turkish bath at Sivas. The next day a dozen of them were attacked with cholera, and on the 15th of April the malady burst out in epidemic form in all quarters of Sivas. I think that the women were all infected by the same source, perhaps at the bath; but however that may be, it is certain that after they were taken ill and the river was contaminated by their choleraic dejections, the disease appeared simultaneously in all parts of the city. During the first week of the epidemic there were about 500 cases, and all sections of the city seemed to be about equally infected.

> The diagnosis of cholera was not made by postmortem or microscopic examination; but the rapid dissemination of the disease, the violence of the attacks, often taking off persons of robust health in a few hours, the rice-water discharges, suppression of urine, the cramps, cyanosis and collapse, leave little doubt that the comma bacillus was present in all its glory.

> The number of cases of cholera from the 15th of April, the day when the epidemic broke out, to the first of June, when it apparently disappeared, that is to say, during a period of forty-five days, was according to the best calculations about 5,000, and the number of deaths approximately 1,500. On account of an ignorant fear of the doctors and a desire to escape the surveillance of the police charged with the isolation and disinfection of infected houses, the people concealed a large proportion of the cases and deaths from the authorities, and consequently the official statistics are far from accurate.

> The number of cases and deaths given above gives a mortality of thirty per cent. This relatively moderate mortality indicates that the number of mild cases was considerable, especially when one takes into consideration the conditions favorable for the disease and entirely unfavorable for the treatment of the sick, which exists in the cities of Asia Minor.

> The proportion of the number of cases to the population is about twelve per cent., and that of the number of deaths about three and a half per cent. We have no statistics relative to the sex or age of the patients; but according to my opinion women were attacked in greater number than meu, and the number of children affected was relatively small.

Few places are better conditioned to demonstrate that Asiatic cholera is not contagious than an Asiatic city like Sivas, and that to have the disease one must have some individual predisposition, some unknown factor. The houses are, as a rule, small, low, damp, crowded, little ventilated, poorly lighted, and for the most part built of mud. The most elementary principles of hygiene are unknown here, or when inculcated are generally disregarded. The Turk is a supreme fatalist, and he places more reliance upon a bit of the Koran pasted over his gate to keep away the disease than upon the most scientific prophylactic measures. The water which the people drink and use for all purposes about the house, flows in open ditches where the people also bathe, and wash their soiled clothing and carpets. That which has served one The water of Sivas is furnished almost entirely by family for its various needs, flows with all its filth to

a small river, which supplies the fountains of the houses and flows in small streams through the streets another. Ultimately it reaches the open sewer which flows in the streets. A quarter of the population defecate in the streets; and where there are water-closets connected with the houses, the excrement flows with the waste water of the fountains, into the gutters of the street and from thence into the streams which traverse the city. In these larger streams, which are really only the great sewers of the city, the people bathe, wash their clothes and kitchen utensils, and the children wade and play. During the epidemic I observed that this went on as usual. I have seen men building a house with the mud scraped up from the sewer which flowed slowly in the middle of the street and which received the dejections of two cholera patients at that point and of several others a little farther up the street.

But it is in the houses we find the conditions most favorable for contagion, if it exists, and for infection. The disinfection of the contaminated rooms, or of the soiled linen, or even of the dejections of the cholera patients was almost wholly neglected. On the contrary, the dejections and the vomitus were often spilled upon the floor or upon the moist earth which serves in place of a floor, and the soiled clothing was thrown here and there without the least precaution. I have seen a woman washing her hands in a basin from which she had just poured the vomitus of a cholera patient. Very few people boiled the water which they drank, being too poor to get the necessary the precaution. Into the little rooms occupied by the patients everybody crowded, a host of children and the interested neighborhood; and I have seen the well occupying the same bed with the sick - sometimes three, husband, wife and child, in bed together, while one was purging and vomiting - and not take

In spite of the fact that the water was contaminated by the cases which continued to occur for thirty days at Tavra, and in spite of the fact that nearly every one was subjected to the unfavorable conditions mentioned above, nevertheless eighty-two per cent. of the population escaped having the cholera, and in forty-five days the epidemic subsided. Since then isolated cases have occurred from time to time, a certain proportion of whom were people who had just come to the city.

The decrease of the epidemic coincided with an increase of the temperature and a marked diminution f the humidity and rain-fall.

Apropos of treatment, it is of interest to note that yoghourt, a common article of diet here, made by the lactic acid fermentation of milk, was already regarded as good for the cholera. As we had no other lactic acid to use during the early part of the epidemic we strongly urged the use of yoghourt in all cases of premonitory diarrhea, also during convalescence, and generally with apparently favorable results.

WANT NO PHYSIOLOGY. — The Christian Scientists of Burlington, Ia., have petitioned the school-board to excuse their children from attendance when physiology is taught. The petitioners declare that there is no material body, and object to having their children taught to believe that there is anything so much in evidence as a stomach or a liver. — Times and Register.

Clinical Department.

A CASE OF SPINA BIFIDA.

BY R. H. SEELYE, A.M., M.D., OF SPRINGFIELD, MASS.

CHARLIE L. was born three years ago of healthy parents. There are in the family three children older and one younger than he, all healthy and sound. There is no history of any deformity in the family.

At birth a tumor as large as an English walnut was noticed in the lumbar region, which after a few months began to enlarge, and continued to grow slowly up to the time of operation.

The patient is a strong, well developed, ruggedlooking boy, with no paralysis or disturbance of func-The tumor was situated over the second lumbar vertebra, twenty-two centimetres in circumference, nearly spherical, tense, fluctuant and translucent. It was somewhat pedunculated, the pedicle being about five centimetres in diameter. True skin covered the base of the tumor. It was very adherent, and extended up from the pedicle two to four centimetres, merging into a thin, transparent membrane. tumor was neither painful nor tender. Its tension increased when the child cried, and diminished after he had been lying down. This was noticed every

morning by the parents. In view of the increasing size of the tumor and the danger of rupture, it was thought best to remove it. In spite of the disfavor with which the operation of excision has been looked upon, it was selected as the fuel or too little convinced of the necessity of taking operation which, if carefully done, would afford in such a favorable case the most radical as well as the most rational means of cure; one in which the dangers of sepsis and leakage could be combatted by proper precautions. The operation of injection of the sac was rejected on account of the uncertainty of cure even after repeated injections, and on account of the danger of the inflammatory process extending to the cord and

> The operation was done May J, 1894, under ether The hips were elevated about a foot higher than the shoulders, to limit by gravitation the escape of cerebro-spinal fluid. The true skin surrounding the base of the tumor was dissected off and the

pedicle laid bare. It diminished rapidly in size down to its point of exit, where it was about 175 milimetres in diameter. A heavy silk ligature was thrown around this, and tied close to the spine, and the tumor cut off. The bony canal admitted the tip of the finger. The deep tissues were brought together with deep silk, and the skin with superficial silk sutures. The wound was dressed with sterilized gauze held by a wide plaster swathe. The child was under ether thirty-five minutes, and reacted quickly.

Convalescence was uneventful, and, as near as could be judged by the feeling of the skin, non-febrile. The child would have nothing to do with a thermometer even in the axilla.

The wound was dressed on the eighth day and the stitches removed. It was clean and dry, and the edges were perfectly united. On the tenth day the child was playing about the house. The wound re-

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or trouble of any sort.

Four months after the operation there is a firm scar, not painful or tender. The parents state that the child is much brighter than before, and that he is entirely free from headaches which he had nearly every morning before the operation. The headaches were due, it would seem, to a disturbance of intracranial pressure, occurring as they did when the child changed from the horizontal to the vertical position, which caused the partially collapsed sac to fill up with cerebro-spinal fluid.

Two points in the technique of the operation seem to me worth noticing. (1) The position of the patient with the hips elevated. This was of no particular importance in this case, but would have been of distinct advantage if it had been necessary to suture the edges of the dura instead of ligating the pedicle. use of heavy silk in ligating (or suturing) the pedicle. In the cases that I have been able to find, those in which leakage occurred were, I think, without exception, those in which catgut was used.

The tumor was examined by Dr. H. C. Emerson who made the following report:

Received from Dr. Seelye a small tumor containing a clear fluid. The tumor consisted of a sac, the size of a small orange, composed of tough, white, unelastic fibrous tissue, covered on its lower outer third with skin. The remaining two-thirds consisted entirely of fibrous tissue, which in places was so thin as to be scarcely perceptible between the fingers. The inside of the sac was traversed by many fine fibrous bands and cords, the largest of which contained a jelly-like mass, and extended down into the pedicle.

The pedicle was about 175 millimetres in diameter.

No nerve elements were found in the tumor.

The fluid was perfectly clear, odorless and colorless; faintly alkaline in reaction; specific gravity, 1.006. slight trace of albumin was present, and urea, by quantitative analysis, was found to be not quite 5 per cent. It did not reduce Fehling's solution, either hot or cold. It was unchanged after standing twenty-four hours, leaving no sediment, and microscopic examination showed no histological elements

Bacteriologically it was sterile.

New Instruments.

NEW INSTRUMENT FOR THE EXTRAC-TION OF FOREIGN BODIES FROM THE EAR.

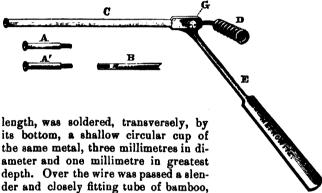
BY STUART ELDRIDGE, M.D., YOKOHAMA, JAPAN.

Almost every surgeon of experience has met with cases of foreign bodies in the auditory canal under circumstances that have taxed his skill and patience to the utmost. Pebbles, beads, hard globular seeds, and the like are especially difficult to extract, the more so if impacted or (what is even worse) if their sojourn in the ear has been of long duration, enabling them, as it were, to establish a cell for their accommodation, in which they may revolve at the slightest touch. Under these conditions the inflammation established by their mere presence or, far more frequently, by ill-judged or awkward attempts at their removal, often narrows the adjacent passage to such an extent as seriously to interfere with operative procedures.

The instrument described below was first extemporized by the writer for use in a case of the kind just | theria. — Cincinnati Lancet-Clinic.

mained perfectly firm, and there has been no leakage alluded to, and after all ordinary, and some extraordinary, methods of extraction had failed, including an attempt to fix the offending substance against the end of a firm rubber tube by suction, an expedient that once served me well in a somewhat similar case. foreign body was an almost spherical and polished quartz pebble, which had been lodged in the ear for several days, during which time its removal had been essayed by more than one surgeon. The pebble was apparently in contact with the membrana tympani, and had in all probability been firmly impacted at first, though now loosened by absorption so as to elude every effort to grasp it or to insert a hook behind it; while the more external part of the canal was so swollen and narrowed as to render any use of instruments a difficult matter.

> To the end of a copper wire, one and one-half millimetres in thickness and sixteen centimetres in



seven centimetres long, until its end rested against the cup. The free end of the wire was then coiled helically, and the cup, by the assistence of heat, thickly lined with ordinary sealing-wax.

The ear was now cleansed by syringing, first with warm water and then with alcohol, and thoroughly The cement-lined dried with a current of warm air. cup was then gently but firmly applied against the offending substance, and the helix heated by an alcohol lamp until slight yielding indicated the melting of the wax. The instrument was retained in situ for a short time, when, on being withdrawn against no little resistance, the pebble was found firmly attached to its extremity. I have since used this appliance with success on several very similar occasions. In its complete and more convenient form the Pebble Extractor is shown in the above sketch, which explains

In using the instrument, thorough cleaning and drying of the foreign body and its surroundings is, of course, essential, and can readily be accomplished in the manner suggested above. Messrs. Meyrowitz, 104 East 23d Street, New York, who have undertaken the manufacture of the instrument, supply with it an improved cement, which I found more readily fusible and more adhesive than ordinary sealing-wax.

Congress has made the following appropriations for the hospitals of the District of Columbia: Emergency Hospital, \$12,000; Columbia Hospital, \$10,000; National Homeopathic Hospital, \$8,000; and it has voted \$4,000 to be used in enforcing the provisions of the act to prevent the spread of scarlet fever and diph-

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVE-MENT.

JOHN T. BOWEN, M.D., SECRETARY.

REGULAR Meeting, Monday, April 23, 1894, the President, Dr. C. F. FOLSOM, in the chair.

Dr. M. H. RICHARDSON showed seventy-five facetted gall-stones, removed from the gall-bladder of a woman of thirty-five. The method of treating the gall-bladder in this case was novel so far as I know, and suggested itself to me as the result of previous experience. Owing to the uncertainty of effectual permanent closure after drainage, especially to the occasional persistence of the biliary flow, it seems very desirable to close the wound in the fundus of the gallbladder. This I regard as unsafe when there has been prolonged impaction in the common or cystic ducts on account of possible biliary extravasations. To sew up the wound and drop the gall-bladder back is the ideal operation, but it is seldom safe to perform it.

In the present instance I fastened the gall-bladder to the wound by a circular margin of stitches about an inch from the cut in the fundus. This left a free margin which can easily be inserted and stitched later if for any reason it should become necessary. The adhesions can easily be separated a few weeks hence, and the operation finished under cocaine anesthesia. This patient made a rapid and very gratifying convalescence. The wound closed in a very short time.

SARCOMA OF THE SCIATIC NERVE: RESECTION OF NERVE AND SUTURE.

Dr. M. H. Richardson also presented a specimen which was removed from the sciatic nerve midway between the hip and the popliteal space. The patient was a strong woman of thirty-three, who had suffered for nine mouths with violent pain in the left lower extremity. A tumor was found which caused a very distinct bulging in the posterior femoral region. The pain was supposed to be from pressure upon the sciatic. There was no suspicion that it involved the nerve

On exposing the growth it was found to be in the substance of the nerve, or rather that the nerve was expanded over and through the mass. The gross appearances were very indicative of sarcoma. Microscopic examination of a section showed the tumor to be a round-celled sarcoma. The mass was the size of a large orange, and was immediately excised by dividing the nerve above and below, and by rapid dissection. The hemorrhage was excessive from innumerable large veins and arteries. To bring the nerve filaments together I used Dr. Beach's method of suture à distance.

The curious effect of this operation, which was bloody and severe, is the enormous rise in temperature and pulse. The temperature rose to 105° and the pulse to 160°, and yet there is no evidence of sepsis. The chances would seem to be that she is suffering from acute septicemia, but on examining the wound there is no blood-clot and no evidence whatever of local trouble; it is hard to explain this condition unless it is due to the great violence done to the sciatic. I have had cultures taken from the wound and from | 1 See page 432 of the Journal.

the blood, but have not heard the results. It seems to me it is analogous to the rise of temperature in broken neck and injuries at the base of the brain, due possibly to some involvement of the heat centres.

July 27, 1894. In the light of the subsequent history of this case the above explanation of the pulse and temperature is amusing. It was a case of sepsis pure and simple; yet the cultures taken on Monday were sterile. Later, the wound, which extended from the fold of the buttock to the popliteal space, was opened and a large amount of bloody pus was evacu-This fluid was filled with staphylococcus ated. pyogenes aureus. The operation was perfectly satisfactory in its details as regards asepsis. That these details were imperfect the history has shown. The discouraging fact is that a careful review of the case fails to show the error that existed. The element of fallibility, therefore, is again glariugly illustrated in this experience. Luckily the patient survived, and was soon doing well. Such an infection in the abdomen, however, would have been fatal.]

Dr. Councilman: Those rises of temperature due to central injury are usually supposed to be due to direct irritation of the heat-producing centres, and I should not think that that same thing could apply in peripheral injury of nerves after stretching the sciatic

Dr. A. THORNDIKE read a paper on

ACUTE ARTHRITIS OF INFANTS IN THE HIP-JOINT.1

DR. E. H. BRADFORD: The subject of acute arthritis is one to which few surgeons until recently have paid much attention. It is apt to be confounded with hip disease, although the whole prognosis and treatment is different. The pathology has been covered so thoroughly by Dr. Thorndike that there is nothing to be said.

DR. R. W. LOVETT: I have been particularly interested in this case. The condition was so desperate that the night it came to the Children's Hospital it did not seem to us that we could leave it until the next morning, and it certainly was in such bad condition after operation that I think we were justified in operating upon it as quickly as possible. I think it would have been impossible to reduce the dislocation at that time; it would have opened new channels for the absorption of pus, and the child's condition was unfavorable. I have seen at the Children's Hospital two or three cases of this deformity where this condition has gone on untreated. The limp and the disability I think are more than in congenital dislocation of the hip, and the joint is flail-like and loose. In the late cases I suppose there is no operation to be done. We see children of eight and ten with all the evidence of having had acute arthritis. Of course, that is a serious disability, and this operation Dr. Thorndike has done would have prevented it entirely.

Dr. J. C. WARREN: I think cases of acute inflammation about the bone should be reported. We have been accustomed to regard most of these cases as tubercular in origin, or not to have had an opinion as to what the origin is; and I am glad to see that men are recognizing that there is something besides tubercular disease of the bone in children, and that we may have acute suppurations as in other parts of the body. The necessity for attacking them early is now recognized. This particular form of osteomyelitis

seems to be especially interesting because it behaves differently from the ordinary forms in the adult, the abscess being on the epiphyseal side and not on the articular side of the epiphyseal line. A certain number of cases have been reported within a few years where this acute suppurative process is found in the epiphysis of the bone, and not in the diaphysis; that is, on the articular side of the epiphyseal line, the pus breaking early into the joint and causing an extensive suppurative arthritis. The cases reported recently in New York seem to indicate that this type of suppuration is not uncommon.

DR. THORNDIKE: There was no destruction of the epiphysis of the femur or of the cartilage as far as I could make out unless this spur of bone had grown to replace a piece of cartilage that had been destroyed. I suppose that during the first days the inflammation started in the diaphysis close to the epiphyseal line. There was no necrosis; but a small localized osteomyelitis may terminate in resolution, I believe, at least in infants. It is also possible that the inflammatory process began in or near the acetabulum as a localized osteomyelitis, or the inflammation may have begun as a pure septic synovitis.

DR. WARREN: It would be very interesting in these cases to be able to decide in what part of the bone such inflammations do arise. I remember one or two cases in which I found pus forming at the articular end of the shaft of the bone. In those cases you have fluctuation in the joint due to a temporary inflammatory process which is non-suppurative. I remember one such case where I made an incision above the joint and came down on denuded bone above the epiphyseal line. I saw the case a few weeks afterwards this disease. and found a sinus leading to bare bone. If in some of these cases there is a focus of suppuration in the interior of the bone, it is important to lay open the abscess thoroughly and also to explore the bone and get out any pus that might be there. If there is no pus of consequence in the bone, it is best not to do injury to the bone by such an operation.

DR. THORNDIKE: The cases of acute arthritis that are reported seem to vary a great deal in severity. One of them I remember had an osteomyelitis which destroyed the entire shaft of the radius. It occurred in one of Von Arsdale's cases examined at the Carnegie Laboratory in New York last year. abscess was opened at the wrist-joint; after two or three days of pain and tenderness, the elbow-joint became involved and the arm much swollen. The periosteum was found dissected up by pus and a sequestrum representing the entire shaft of the radius was removed. It seems to me that although it is assumed that most cases begin in this diaphysis close to the epiphyseal line, it has not been explained why in certain cases the pus should be directed into the loose cancellous bone of the shaft, while in others the inflammation is severe only in the joint. Some of the cases may be pathologically merely an acute suppurative synovitis.

A VERY serious epidemic of diphtheria is reported in Trieste. During last week 61 fresh cases occurred out of a population of 160,000. The Government has issued a decree closing all the schools, with a view to preventing the further spread of the disease. — Medical Press.

NEW YORK STATE MEDICAL ASSOCIATION.

ELEVENTH ANNUAL MEETING.

THE afternoon of the third day of the session, October 10th, was mainly devoted to

A DISCUSSION ON THE PREVENTION OF TUBER-CULOSIS,

which was opened by Dr. Hermann M. Biggs, of New York. The propositions embraced were the following:

- (1) The importance of tuberculosis from a sanitary standpoint, as shown by its prevalence.
 - (2) The factors in the causation of tuberculosis.
- (3) The communicability of tuberculosis and the manner of its transmission.
- (4) The early recognition of pulmonary tuberculosis through bacteriological examination, and its influence on prevention.
- (5) The influence and value of special hospitals for the treatment of tuberculosis in the prevention of the
- (6) The influence of doctrine of communicability upon the diminished prevalence of tuberculosis.
- (7) The importance of measures to be taken at health-resorts for tubercular patients for the prevention of this disease.
- (8) The dangers of infection in the various means of transportation, that is, steamboats, surface and elevated cars, day coaches and sleeping-cars.
- (9) The proper attitude of the State municipal and sanitary authorities toward tuberculosis, and the specific measures to be taken for the prevention of this disease.

On account of the great prevalence and mortality of the disease, Dr. Biggs said, there was no question, which from a sanitary point of view, compared in importance with that of the prevention of tuberculosis. Furthermore, there was no matter concerning the public health in which, as shown by experience, more satisfactory results could be obtained, notwithstanding the unfavorable conditions that had to be contended against in all great cities of population. to be anticipated that he had any facts or phases of the subject to present; but it was certainly one of the great questions of the day how the evils of tuberculosis might be mitigated in the future. It was his purpose to call attention to some of the sanitary aspects of this question, and especially to the measures for the prevention of the disease which had been adopted by the New York City Board of Health.

As was well known, it was in 1882 that Koch announced his brilliant discovery of the microbic origin of tuberculosis, and the truth of his conclusions had soon been universally accepted by scientific authorities. From that time the study of the disease assumed new aspects. Its relative prevalence and mortality placed it first in importance. Judged purely from demonstrated facts, tuberculosis was as easily preventable as any other infectious disease. Moreover, the methods for its prevention could be applied more readily and with less harshness than in the case of any other infectious disease. It was to-day universally acknowledged that every case of it was the direct result of tubercle bacilli transmitted from some other individual suffering from the disease, and that these bacilli are conveyed in known discharges from the body. While the importance of inherited predisposition

fully admitted, the fact of acquired tuberculosis was of far greater importance. But up to the present time no efficient public measures for the prevention of the disease had been taken even in Berlin, where its infectious nature was first demonstrated. As regards sanitary surveillance of tuberculosis New York City was in advance of the world. Against such surveillance it had been urged that the disease was not readily transmitted, that for its communication long exposure was required, that physicians and many others who were exposed to it, as a rule, escaped contracting it, that consumptive patients would be regarded as plague stricken if tuberculosis was to be placed by the authorities on the footing of an infectious disease, and that the disease was often inherited. None of these objections had any real weight. The greatest encouragement for the adoption of preventive measures was found in the fact that the tubercle bacilli do not readily multiply outside the body, and that the disease is unquestionably produced solely from infection, being always transmitted.

As long ago as the year 1887, Dr. Joseph D. Bryant, then Health Commissioner, called for a report on tuberculosis from the pathologists of the New York Board of Health, and as the result of his activity in the matter certain measures were adopted. number of leaslets explaining the infectious nature of the disease and giving detailed instructions designed to prevent its spread were distributed throughout the city; but the medical profession had not at that time fully awakened to the importance of preventive measures. This was the first effort made towards the establish-

ment of sanitary surveillance.

In the Autumn of 1893 Dr. Biggs, as Chief Inspector of Pathology, Bacteriology and Disinfection made an elaborate report on tuberculosis, in which he recommended the adoption of positive measures placing this disease on the basis of an infectious disease. The main points of this report have already been published in the JOURNAL.] At a meeting of the Board of Health held November 13th, this report was referred to the Sanitary Committee of which Dr. Cyrus Edson was Chairman, and at a meeting held December 13th the report of the committee was received and adopted. That report was in part as follows:

The report of Dr. Biggs is timely and well advised. The subject is well summed up in the three facts relative to the disease set forth on page 2, to wit: (1) Tuberculosis is a cummunicable disease and is distinctly preventatable. (2) It is acquired by direct transmission of the tubercle bacilli from the sick to the well, usually by means of the dried and pulverized sputum floating as dust in the air. (3) It can be largely prevented by simple and easily applied measures of clean-The following recommendaliness and disinfection. tions, based upon the foregoing premises, are approved:

- (1) That a circular be prepared for distribution among the people, setting forth the danger of transmission of tuberculosis, and the fact that the discharges from the lungs of tubercular patients are not only dangerous to others but also to the patient afflicted, and also setting forth the danger of expectorating in places where the sputum is liable to be dried and carried by the air in the form of dust.
- (2) That physicians and other persons to whom the knowledge of the existence of a case of tuberculosis may come, be requested to report to this Department

within seven days of the time when such sick person came under observation.

- (3) The medical sanitary inspectors shall, as part of their duty, investigate cases of the disease reported, and, if requested, take specimens of the sputa in doubtful cases for diagnostic purposes, the same as in diphtheria.
- (4) That this Board urge upon hospital authorities of the city of New York the importance of separation, so far as possible, of persons suffering from pulmonary tuberculosis from those affected with other diseases, and urge that proper wards be set apart for the exclusive treatment of this disease. Furthermore. that the Commissioners of Charities and Correction be recommended to take such steps as will enable them to have and control a hospital, to be known as "The Consumptive Hospital," to be used for the exclusive treatment of this disease, and that, as far as practicable, all inmates of the institutions under their care suffering from tuberculosis be transferred to this hospital.

(5) It is recommended that the disinfecting corps disinfect places where evidence from tuberculosis exists, whenever in the opinion of the Chief Inspector of Contagious Diseases, it shall be necessary.

(6) It is recommended that suitable receptacles (cuspidores), be provided and properly cared for in all places where persons are brought together, or caused to congregate for any purpose, especially in factory buildings.

At a meeting of the Board of Health held January 24, 1894, Dr. Biggs presented a second report in which he recommended the employment of the following measures for the sanitary surveillance of pulmonary tuberculosis.

(1) That circulars of information should be forwarded to all practising physicians in the city.

- (2) That the authorities of all public institutions be required to forward to the Department the name, last address, age and sex of every consumptive person coming under observation within seven days of such
- (3) That medical sanitary inspectors detailed for this work visit the premises in all cases, unless otherwise ordered, when the Department obtains knowledge of the existence of cases of pulmonary tuberculosis, and distribute circulars and instruct the consumptive and the family as to the measures to be taken to prevent the dissemination of the disease, and, if required, give such directions and advice as shall seem necessary for the cleansing or renovation of the apartment to render it free from infectious material.
- (4) That medical sanitary inspectors also visit all premises which have been occupied by consumptive patients and vacated either by death or removal, and shall direct as to the removal of infected articles for disinfection by the Department, and shall forward written recommendations as to the cleansing and renovation of the premises. On the basis of these recommendations an order shall be issued by the Board on the owner of the premises with directions as to their renovation, notifying him that the Board will not allow the premises to be occupied by any other persons than those living there at the time, until the order has been complied with. At the same time a placard shall be pasted on the door of the apartment stating that it has been occupied by a consumptive the name, sex, age and address of every such case and thus become infected, and that it must not be

occupied by persons other than those at the time residing there until an order of the Board of Health, directing that it be cleansed and renovated, has been

complied with.

(5) That suitable arrangements be made by the Department for the collection and microscopical examination of the sputa for diagnosis of persons thought to be suffering from pulmonary tuberculosis, where the name, address, age and sex of such person, and the name and address of the attending physician, accompany such record.

(6) That the Department issue circulars from time to time covering all the various phases of the question of tuberculosis and its prevention, for the education of the people in regard to these matters.

At a meeting of the Board of Health held Febru-

ary 13th, this report was approved and adopted. The Board, Dr. Biggs went on to say, decided to adopt the plan stated rather than the practice of disinfection, because it was impossible to draw up any adequate scheme for the latter. Renovation was, in fact, far more satisfactory than disinfection. The measures referred to had already been carried out in about three thousand living cases, and in about three thousand eight hundred cases where death had occurred from consumption. The results obtained, he was happy to say, were exceedingly satisfactory. Among the better class of tenement-houses, in a large proportion of cases (about one-half), it was found that the preventive measures recommended in the circulars of the Board of Health were already being used at the time when the inspector made his first visit to the premises. This was very gratifying as showing how the knowledge of the infectious nature of tuberculosis was being disseminated among the people. The measures adopted by the City Board of Health had now been adopted by the State Board of Health and also by the Rhode Island Board of Health, as well as by several cities in other States.

The means for the prevention of tuberculosis might be summed up as follows:

(1) As regards the tubercular patient. First, notification; second, advice against marriage; third, disinfection of infected matters. The use of sputum cups or cloths which could be readily destroyed. Caution in the use of eating-utensils and especially of drinking-cups in public places. Avoidance of kissing. Renovation of living apartments. Exclusion from certain occupation where others would be liable to contract the disease. Special hospitals for the treatment of consumptives. The removal of the patient by force, if necessary, in tenement-house districts where the population is so impoverished or so ignorant that no precautionary measures are possible.

(2) Regulations regarding general sanitation, such as the prevention of overcrowding, good ventilation and drainage, the height and width of dwellings and

the air-space between, etc.

(8) As regards children. The removal of delicate children from unhealthy surroundings, to a favorable Measures to promote chest climate, if possible. Sleeping in well-ventilated Cold baths. Care against and Proper clothing. prompt treatment of catarrhal affections. Avoidance of close rooms.

(4) Early diagnosis and treatment. A bacterial

case and in cases where there are neither physical signs or tubercle bacilli in the expectoration tuberculin should be employed for diagnostic purposes.

(5) Governmental inspection of dairy cows and ani-

mals to be slaughtered for food.

(6) Preventive measures in public conveyances, railway cars, etc.

In New York, he said, in conclusion, we had notification of all cases in institutions, inspection in a considerable proportion of cases in private dwellings, bacterial examinations in all suspected cases reported, and inspection of milk and of meats in the markets and slaughter-houses. What was needed in addition was notification, special hospitals for the treatment of tuberculosis; and inspection of the meat and milk supply outside the city.

Dr. LAWRENCE FLICK, of Philadelphia, was the next speaker, and his remarks were illustrated by a number of lantern slides thrown upon the screen. He said that the prevalence of consumption had been lamented ever since the days of Hippocrates. In America the disease was unknown, however, up to the time when Europeans came here. In the map of the United States showing the distribution of phthisis in 1870 there was very little to be found in California and so small an amount in Florida that it was not recorded. In the map of 1880 the disease was shown to be very prevalent in both these States, owing to the influx of consumptives in search of a favorable climate. Speaking of environment, he stated that small streets and alleys were especially apt to be centres of infection, and that unfavorable conditions in home life frequently resulted in the extinction of entire families. The home was the most prominent factor in the distribution of tuberculosis. In this connection he exhibited a survey of a certain district of the city of Philadelphia showing the deaths from the disease during twenty-five years. It was to be noticed that these deaths frequently occurred in adjoining houses. Similar maps, he said, had been made in New Haven, Springfield and other cities by Dr. Chapin and other physicians, and they all afforded strong proof of the infectious nature of the disease.

In England the establishment of special hospitals for consumptives alone, without any other general measures of prevention whatever, had already reduced the mortality from tuberculosis nearly fifty per cent. At the present time the capacity of these hospitals was about seven thousand beds. The gradual and persistent reduction in the mortality since their introduction offered an excellent incentive to the same kind of work elsewhere. The vital statistics of Philadelphia showed that since the year 1883 there had been a reduction of about 800 a year in the mortality previously recorded from tuberculosis, and this year, he was happy to state, the reduction would be over 1,000. In England the number of deaths from the disease was now about 11 per thousand, and in Berlin the mortality had been reduced nearly one-third. In Paris, however, there had been no reduction during the last forty years, and the mortality still remained as four per thousand. In the preventive measures now adopted, New York was far in advance of any other city in the world, and it would lead all others in stamping out this dread That the disease could be effectually destrover. stamped out he was thoroughly convinced. The history of tuberculosis in lower Italy was a very instructive examination should at once be made in every suspected one. A hundred years ago the annual mortality from

the disease amounted to ten per thousand, and so great was the fear of it that travellers very generally refused to go there. In consequence, the Government adopted the most severe preventive measures, which, while not very scientific, certainly proved efficient. As a result, the number of deaths from tuberculosis became reduced to about one-tenth per thousand in the cities. and in the rural districts to practically nothing.

DR. JOSEPH D. BRYANT said that at the urgent request of Dr. Biggs he would say a few words in regard to the early history of the fight against tuberculosis in the city of New York. In 1887 it seemed to him that the time had come for the Board of Health to take some preventive measures, and with a view to finding out what the medical profession thought of the matter, he addressed a communication to twenty-four of the most prominent physicians in New York in which he put the questions, (1) Do you believe tuberculosis to be a contagious disease? (2) If so, would you advise that the Board of Health should take the same kind of measures in this as in other contagious diseases? In the great majority of instances no reply whatever was received from these gentlemen. The reason for this was, in Dr. Bryant's judgment, not because they did not believe in the infectious nature of the disease, but because at that time they feared to meddle with the question. But two replied in an unqualified manner, Yes. They were Dr. Austin Flint and Dr. Frank P. Foster, editor of the New York Medical Journal. Encouraging replies were received from Drs. E. G. Janeway, A. Jacobi, and one or two others, but there were not more than six responses in all. One of the most prominent physicians in the city wrote, "No, it is not contagious, and I do not think it concerns the Board of Health."

Dr. Bryant said he mentioned this episode to show the great progress that had been made between 1887 and 1894. He was not, however, discouraged by the meagre support received from the profession. He employed an agent to investigate every case of death from tuberculosis reported at the Bureau of Vital Statistics and find out, if possible, whether there had been previously, or were at the time of the death, any other cases of consumption in the family. His object was that in case he could obtain any reliable data on this subject he would urge the Board of Health to take steps for the sanitary surveillance of the disease. But after two years the gentleman having the matter in charge had not gathered sufficient facts to warrant him in taking this position. Circulars, however, were distributed throughout the city, setting forth the communicability of tuberculosis and describing the best means for preventing its dissemination. In conclusion, he said that the presence of epidemic diseases was often a blessing in disguise, and the threatened invasion of cholera two years ago, was one of the most fortunate things that had ever happened to the city of New York. By the awakening of public sentiment it had effected much sanitary improvement and it had directly led to the appropriation of funds for the carrying on of the great scientific work under the auspices of the Health Department in which Dr. Biggs was making himself famous.

DR. E. K. DUNHAM said that in tuberculosis the chief sources of infection were from animals and the sputa of consumptive patients; compared with these all others sank into insignificance. The State Sanitary

Tuberculin was successfully employed for purposes of diagnosis and infected cattle were destroyed. It did not seem just that when cattle were thus condemned the entire burden of the loss should fall upon the owner. It would be equitable, he thought, that the expenses of a first inspection should in all cases be borne by the State, but if any subsequent inspections were required, the owner of the cattle should pay the expense. In the cases of tuberculosis in the human subject, the public regulations should be such as to best prevent the spread of the disease without any unnecessary inconveniences to the patient. The same methods were not required as in the case of such highly contagious diseases as diphtheria, smallpox and scarlet fever. In a large number of cases the appropriate preventive measures could be carried out through the agency of the family physician, and he thought a penalty should be exacted in cases where these were neglected. Among the pauper class the problem was an easier one, as the health authorities could then assume full control.

DR. WM. H. PARK spoke of the lack of appreciation of the infectiousness of tuberculosis which prevailed to a considerable extent even at the present day, and said that the reasons for notification were, First, To enlighten the public. The majority of cases in New York occurred in the tenement-houses, and the circulars of information issued by the Board of Health did much good. Second, To obtain a knowledge of the best means of prevention.

The matter of expense, or even the discomfort of the patient, sank into insignificance when the frightful mortality from tuberculosis was considered. Dr. Park then made a strong plea for special hospitals for consumptives, and said that with proper hospitals and proper precautionary measures tuberculosis could be entirely stamped out of the crowded districts of

Dr. Edward G. Janeway, who was prevented by indisposition from being present, sent a contribution to the discussion which was read by Dr. Biggs. it he said that fully twenty years ago he wrote an article for Sequin's Archives of Medicine in which he argued in favor of the infectious nature of tuberculosis. It required Koch's work, however, to accomplish a general acceptation of this fact. Personally, in his practice, he had for a long time endeavored to use measures to protect others against the disease when attending a case of phthisis. In a paper read before the New York County Medical Association a year ago on the "Dangers of Overcrowding," he had called attention to the decrease in the number of deaths from this disease, in proportion to the population, in the cities of New York and Philadelphia within the last ten years. The results seemed very favorable, notwithstanding the imperfect preventive measures hitherto adopted. That the sputa of patients was the principal factor in the dissemination of tuberculosis there could be no doubt; but other circumstances were also to be taken into account, and we must never lose sight of the fact that it was of the utmost importance in all cases to endeavor to strengthen the resisting capacity of the individual. The overcrowding in tenement-houses unquestionably tended to increase the disease, and here civic sanitary measures were of the

greater service. In making a diagnosis based on the sputum a single authorities had taken cognizance of the former, negative examination should never be permitted to

exclude tuberculosis. It was entirely possible for the disease to be present without any bacilli appearing in the expectoration. Thus, the bacilli might be numerous, but be swallowed, and he had met with cases of miliary tuberculosis in which no bacilli could be detected in the sputum. That health-resorts might become a source of danger are very evident. Many invalids devoted proper attention to the necessary precautions, but others were very careless. The danger was that some of the sputa should be allowed to remain on the carpets or the walls, and unless the landlord was unusually particular, the most serious consequences might result. It seemed to him that in hotels where consumptives are received it would be well to devote a certain portion of the house, or, better still, a detached building, to their apartments. These should be fitted up with hard walls and supplied with bedding and towels so marked that it would be impossible to use them in other parts of the hotel. Of course, the landlord should always notify guests before placing them in rooms that had been occupied by consumptives, but this was no doubt too much to

Having spoken further of the precautions that should be taken at health-resorts, he went on to say that while fully recognizing the contagious nature of the disease the preventive measures employed should be such as to occasion as little hardship as possible. Such rules as had been adopted by the Board of Health seemed to be entirely reasonable. If all physicians would cordially co-operate with the Board, there could be no doubt that the most excellent results would follow; but unfortunately many in the hurry of practice neglected to enforce all the necessary precautions.

DR. JOHN G. TRUAK, referring to the suggestion of Dr. Biggs, that where there was doubt as to the diagnosis, after the sputum had been examined for bacilli, tuberculin should be employed, said that his experience with this agent had not been favorable. It seemed to him that while it was of assistence in diagnosis it had the undesirable effect of hastening the patient's death.

In closing the discussion, Dr. Biggs spoke of the gratification he felt at the presence on this occasion of Dr. Flick, who by his numerous contributions to medical literature had done more to place tuberculosis on the footing which it now holds than any other authority in this country. If Philadelphia had not been such a conservative city, it, and not New York, would have been the pioneer in establishing sanitary surveillance of the disease. In regard to the use of tuberculin, he said that last summer he had a long conversation with Dr. Koch in Berlin in which the latter assured him that it had been used in about a thousand cases in Berlin. It was employed for diagnostic purposes as a routine practice in all suspected cases of tuberculosis which were not well defined (no bacilli in the sputum, etc.), and it was never followed by any bad results. In the treatment of cases of pure tuberculosis (but in no other class) it had been found invaluable, and when used in minute doses and for a long time it almost always produced a cure. In mixed infections this agent was not desirable, and he thought that the bad results which had been noticed from its use had been in broncho-pneumonia and other mixed cases. Koch had expressed his opinion that in this class of cases it was not only valueless but distinctly unfavorable.

Recent Literature.

Essentials of Refraction and the Diseases of the Eye.

By Edward Jackson, M.D., Professor of Diseases of the Eye in the Philadelphia Polyclinic, etc.

Essentials of Diseases of the Nose and Throat.

E. B. Gleason, M.D., Surgeon of the Nose, Throat and Ear Department of the Northern Dispensary of Philadelphia, etc. Second edition. Philadelphia: W. B. Saunders. 1894.

The fact that a second edition of this book is called for attests its popularity. There will always be a difference in opinion on the merits of small quiz-books, in the form of questions and short answers. The binding in one volume of two subjects so remote from each other as the eye and throat seems unnecessary.

The Parmacopaia of the Hospital for Diseases of the Throat, London. Edited by F. G. HARVY, F.R.C.S., Surgeon to the Hospital. Fifth edition. Philadelphia: P. Blakiston, Son & Co. 1894.

The fifth edition of this little formulary differs in many respects from the former editions, edited by the late Sir Morell Mackenzie, and so extensively used, especially in England. Several new drugs not in use at that time have been introduced, several formulæ of nasal douches, insufflations, mixtures, paints and pills and a few other preparations. The book contains only about a hundred pages, and has in it all possible preparations that any one could desire to apply to the upper respiratory tract. It is founded upon the British Pharmacopæia, but this fact is only confusing in the case of a small minority of prescriptions for the American physician.

Handbook of Obstetric Nursing. By Francis W. N. HAULTAIN, M.D., F.R.C.P. Edin., and James Haig Ferguson, M.D., F.R.C.P. Edin., M.R.C.S. Eng. Second edition, revised and enlarged. Philadelphia: J. B. Lippincott & Co.

This little book needs only a very few words, so far as its interest for American readers is concerned. It may be admirably adapted for the conditions which surround the Training School for Nurses in connection with the Edinburgh School of Medicine; if so, these conditions are so entirely different from those among which American nurses work, that the book will be of little value to them. Almost its sole interest to physicians is in the side-light which it throws on Scottish practice.

Leçons de Thérapeutique. Par GEORGES HAYEM, Professeur de Clinique Médicale à la Faculté de Médecine de Paris, Médecin de l'Hôpital Saint-Antoine, Membre de l'Academie de Médecine. Paris: G. Masson, Editeur. 1894.

This book makes the fifth of the excellent volumes by this author on the subject of therapeutics. The earlier volumes treat especially of drugs and their uses, but in this the writer presents the methods of using heat, electricity, modifications of atmospheric pressure, climate and mineral waters, in the treatment of disease. Professor Hayem disclaims any originality for this volume. It is well done; but being a compilation only, it lacks the strength which his enthusiasm imparted to such portions of his other works as were the result of his original investigations — investigations which have so frequently advanced our knowledge in the fields which he has chosen.

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THE SURGERY OF THE STOMACH.

THE principal operations performed on the stomach are gastrostomy, gastrotomy, gastrectomy, and pylorectomy.

GASTROSTOMY consists in opening the stomach and suturing it to the abdominal wall, thus creating a permanent fistula through which the patient may be fed. It is indicated in cases of cicatricial contraction of the esophagus and cardiac orifice of the stomach, even when the stenosis is the result of malignant disease, the time for the operation being when the patient can no longer be sufficiently nourished by the mouth. In such cases, it is always irksome and difficult if not impossible, to dilate the stricture by passing bougies so as to feed the patient.

Gastrostomy was first performed by Sedillot in 1849, for stricture of the esophagus, though it had been previously performed on animals by Basson and Blondlot for the purpose of studying the physiology of digestion. One of the earliest operations was that of Verneuil, on Marcelin, for fibrous stenosis; the patient lived for many years in good health, being nourished through his fistula.

The operation has now been performed several hundred times with, of course, a large mortality; it has been very successful in cases of cicatricial contraction from corrosive liquids (caustic potash, concentrated lye, mineral acids), while being generally fatal when performed for malignant disease, in which case, if the patient does not die from the operation, he dies shortly afterward from extension of the carcinoma.

In 1887, Zizar had reported 162 gastrostomies 129 having beenper formed for cancer of the esophagus with only 18 recoveries; 31 operations were for syphilitic stenosis, with 11 recoveries. Meydl the same year published records of 40 gastrostomies in Albert's clinic in Vienna, with a mortality of 57 per excisions of portions of the stomach containing morbid cent.

We have not space for the now extensive bibliography of this operation, which has been performed in almost every city and large hospital throughout the world.

Dr. N. Senn's admirable monograph deserves mention in this connection. He believes gastrostomy to be indicated in all cases of cicatrical and malignant stenosis of the esophagus as soon as a sufficient quantity of food cannot be introduced into the stomach by simpler means per viam naturalem. The upper central part of the left rectus and the eighth intercostal space between the cartilages of the ribs are the most desirable points for the formation of the gastric fistula. If the patient's strength warrants it the operation should be done à deux temps, as it is safer to postpone opening of the stomach until firm adhesions have been formed between the stomach and the circumference of the external incision, than to establish the gastric fistula at once. Leakage from the fistula can be prevented most effectually by making the opening in the stomach small, by the use of an inflatable double rubber bulb through which the feeding tube reaches the stomach, or by making an oblique tunnel in the anterior wall of the stomach, as devised and practised with success by Witzel. Solid food should first be subjected to thorough mastication and insalivation by the patient before it is transferred to a small funnel connected with the distal end of the feeding tube.

GASTROTOMY consists of opening the stomach. and this operation has been often performed for the removal of foreign bodies from the gastric cavity. The first operation of the kind on record was that of Florian Martis in 1602, who removed a knife nine inches in length from the stomach of an adult man, with perfect recovery. The operation has since then been very often performed for the removal of knives, forks, spoons, pebbles, pins and needles and pieces of wood from the stomach. In a case reported in the JOURNAL several years ago by Dr. M. H. Richardson, a set of false teeth impacted at the cardia was removed by an ingenious operation.

Dr. Bernays in the Medical News gives a table of 13 operations with a mortality of only 10 per cent. He prefers the abdominal incision in the linea alba as affording more room for operative manipulation than an oblique incision parallel with the ribs. shows that the method of applying the sutures in closing the gastric incision varies very much. In two instances no sutures were employed, the patients recovering, and in others interrupted and Lembert sutures were used alone or conjoined. Very fine catgut was used by him for the first five interrupted sutures carried through the three coats; these sutures were cut very close. Eight Lembert sutures made with thin Chinese silk were applied over the catgut sutures and completely buried them.

GASTRECTOMY is a term which has been applied to growths or ulcers. One of the few successful cases

was that of Czerny (recorded by Senn); a perforating ulcer of the stomach was treated by excision. Porges (University Medical Magazine, May, 1891) showed from Maydl's clinic a man who had a considerable portion of the stomach removed for carcinoma of the greater curvature. "The cut ends of the stomach were united by sutures in terraces." The operation lasted nearly two hours. The patient made a good recovery and gained forty pounds in weight. The resected piece was seven inches long by seven inches broad.

Kahler remarks that experiments on dogs show that they survive very well extirpation of the stomach, and observations on man have demonstrated that it is quite possible to live without this organ. 1 Certainly, gastrorrhaphy to reduce the size of a dilated stomach has been quite successfully performed by Weir, Bircher, In Weir's operation he "took and one or two others. a tuck in the stomach, sewing its peritoneal surface in such a way as to bring about a double fold which projected into the cavity of the stomach." reports three successful cases. The size of the stomach was diminished "by folding a portion of the stomach walls into the lumen of that organ, making more or less of a plait." Excellent representations of this operation are given in Sajous' Annual for 1893. Tricomii of Padua, exsected from the pyloric end a large ulcer, causing constriction, and sewed the raw surfaces together after Czerny's method. tient made a good recovery. Similar successful exsections have been made by Lange, Allingham, N. Stone Scott, Barker, Weir, J. W. White, Markoe, and others.

PYLORECTOMY, or resection of the pylorus for stenosis due to caustics, cancer, ulcer, etc., was first done by Pean in 1879, since which time it or "gastroenterostomy" (an operation by which the cut stomach is joined to some part of the duodenum) has been performed more than a hundred times. Blum, in fact, in 1890 had collected 131 cases, of which 85 were fatal. E. Doyen, of Rheims, reports 32 pylorectomies, done for stenosis and cancer. Three pyloroplasties were performed for the cure of stenosis; the incision was made in the axis of the lesser curvature; the patient recovered.

Von Hacker has published 15 cases of resection of the pylorus for carcinoma; 7 recoveries. The mortality of Billroth's 124 cases (inclusive of gastro-enterostomies, resections of portions of the intestine, removal of scar tissue for chronic diseases) was about 50 per cent.

In cases of pylorectomy for malignant disease a permanent cure is of course not to be expected; the operation is a severe and dangerous one, and neither it nor divulsion of the pyloric orifice for stricture are to be lightly attempted; yet so much relief and improvment have followed these operations that they are always to be thought of in connection with carcinoma of the stomach.

THE MORTALITY AMONG MASSACHUSETTS SCHOOL-CHILDREN.

In our last issue we had an editorial review of Dr. E. M. Hartwell's second report as director of physical training in the Boston public schools. In the course of that review, we quoted Dr. Hartwell's conclusion that, the losses due to deaths of Massachusetts school-children are largely in excess of what is necessary and irremediable and also in excess of similar losses in cities so great and so densely populated as London and Berlin; and then his corollary that municipal and school sanitation are better devised and better carried out in those cities than in Boston.

In making this statement it was evidently as far from Dr. Hartwell's intention, as it was from ours in accepting it, to suggest any dissatisfaction with the administration of municipal sanitation by the Boston Board of Health. One has only to refer to the last annual report of that board, its twenty-second, and to our review of that report (June 14, 1894, p. 602), to be convinced that the Boston Board of Health is fully alive to the defects in the sanitary control of public-school children, and to the necessary reforms for remedying the most flagrant, in a measure.

To show this it is only necessary that we should again quote the following paragraph taken from page 51 of that report:

"It is evident that the School Committee is without the means or authority by which it can protect the schools against contagious diseases and many impositions, and it is desirable that the Board of Health, the proper custodian of the public health, should be provided with the means by which it may protect the school-children, while endeavoring to control a common danger in the rest of the community."

The beneficent work of boards of health is limited by the powers and the means granted them. The increase of such powers and such means can only be obtained by emphasizing and reiterating the evils which their absence entails.

In Dr. Hartwell's report we find on page 30 the following query: "May it not come to pass that the continuance of the present laissez faire policy of school-boards as a class will provoke the boards of health to claim jurisdiction in regard to the prevention of school-diseases, even as they have taken over the control of school-children suffering from contagious and infectious disease?"

MEDICAL NOTES.

An Outbreak of Small-Pox in Michigan.—A considerable outbreak of small-pox has occurred in Manchester, Mich., and neighboring towns and is causing some alarm.

SMALL-POX AT WASHINGTON, D. C. — Several cases of small-pox have occurred in Washington, D. C., during the last week which have been traced to a case occurring in the family of an employee of the pension department.

¹ Sajous' Annual, 1892, c, page 5, vol. iii.

AN EPIDEMIC OF DIPHTHERIA IN CASEYVILLE, Ky. - An epidemic of diphtheria is reported from Caseyville, Ky., and the adjoining towns in Hardin County, Ill. Some forty deaths are said to have occurred already.

A DECISION OF THE TORONTO COURTS has lately been reported, in which consumption is declared to be a contagious disease, and that a child affected with it can be excluded from the public schools.

DR. ROUX DECORATED. - Dr. Roux has received from President Casmir-Perier the congratulations of the government and the Cross of Commander of the Legion of Honor, in recognition of his work upon the serum treatment of diphtheria.

THE MORTALITY FROM CANCER AT LYONS. — At the Eighth French Congress of Surgery held at Lyons last month a session was devoted to a discussion upon cancer. M. Febre, of Lyons, reported the mortality from this disease in Lyons since 1875. In 1875 the total number of deaths due to cancer was 444. In 1893 it was 605. The average yearly mortality by five-year periods was as follows: From 1875 to 1879, 485; from 1880 to 1884, 545; from 1885 to 1889, 563; from 1890 to 1893, 580; allowing for the increase of population during this time, and estimating the mortality per 100,000 inhabitants, the annual rates during each of the four periods of five years are found to be 136, 143, 137, 134, showing that the mortality from cancer has not really increased.

A MEDICAL LIBRARY ASSOCIATION IN GRAND RAPIDS, MICH. — A Medical Library Association has been recently organized in Grand Rapids, Mich. purpose of the Association is the formation of a reference library upon medicine and allied sciences. new organization starts out with a membership of about fifty, composed not alone of physicians, but dentists and pharmacists as well. One of the features of the Association will be the admission of non-residents to membership, whereby for a small annual fee physicians outside of the city may avail themselves of the advantages of the library. A competent librarian will be secured and the most approved methods of cataloguing and indexing will be made use of. Books and journals are being liberally donated by those interested in the project, and the success of the enterprise is assured. The following officers have been elected: Dr. G. K. Johnson, President; Dr. S. G. Milner, Vice-President; Dr. W. A. Dorland, Treasurer; Dr. Reuben Peterson, Secretary.

A Novelist's Opinion of Doctors. — Mr. James Payn, in the course of some reminiscent articles in the Cornhill Magazine, says: "Upon the whole, and for a 'scratch' companion, I prefer a doctor to a man of any other calling. He may not be very good as a conversationalist, but he is rarely very bad, like a cheroot. He has had a genuine experience of life, and has seen down to the depths of it; a sick man does not attempt to deceive his doctor or put the best face on his character, as he does with a priest. More-books from the public library.

over, what is very unusual, your doctor knows more about you, professionally at all events, than you know about yourself. He does not tell you about it, it is true; not a word of that aneurism you carry about with you, and which will some day kill you in half a minute, but your consciousness that he may possess such knowledge makes him interesting. The best suggestions I have had made to me for plots for my novels have come to me from doctors, to whom I have also had cause to be grateful for many things."

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. -- During the week ending at noon, October 31, 1894, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 139, scarlet fever 55, measles 24, typhoid

BOSTON MEDICAL LIBRARY ASSOCIATION, HOLMES MEMORIAL MEETING. - The Boston Medical Library Association held a special meeting Tuesday evening, October 30, 1894, at 19 Boylston Place, for the presentation of resolutions on the death of Dr. Oliver Wendell Holmes, and to consider the recommendation of the Executive Committee for some suitable memorial to its late President. It was voted that the main hall in the new building of the Association be called Holmes Hall. The JOURNAL will publish later a report of the meeting.

THE BOSTON SCHOOL BOARD AND VACCINATION. - At its last meeting the Boston School Board passed the following order amending the section of the regulations referring to vaccination:

"SECTION 233. No pupil shall be admitted to the public schools without a certificate of a physician that such pupil has been vaccinated, or a certificate signed by a regular practising physician that such pupil is an unfit subject for vaccination; but these certificates shall not be required of pupils who are transferred from one public school to another. In the case of all admissions of pupils for the first time to the public schools, the principal shall make a record in some book, accessible for reference, of the fact that certificates of vaccination, or certificates that the pupils are unfit subjects for vaccination, have been presented, giving the name of each pupil, the date of admission and the name and residence of the physician by whom the certificate is signed, etc.,"—the remainder of the section being the same as at present.

THE MASSACHUSETTS CHARITABLE EYE AND EAR INFIRMARY. - During the past year 19,365 patients were treated at the Massachusetts Charitable Eye and Ear Infirmary, of whom 1,065 were house patients. At the annual meeting the previous board of management and the visiting staff were reappointed for the ensuing year.

SCARLET FEVER IN WOBURN, MASS. - So many cases of scarlet fever have occurred in the city of Woburn, Mass., during the past week, that the School Board, acting under the advice of the Board of Health, has ordered all the schools in the centre district closed. This affects some eight schools. The Board of Health has advised a temporary suspension of distribution of

Wiscellanp.

DR. OLIVER WENDELL HOLMES.

THE Cincinnati Lancet-Clinic in its notice of Dr. Holmes calls attention to the chivalrous character of his writings and his high estimate of women as one of his surest claims to remembrance. He says:

"To our mind his lyrics are his best poetic work. They are written in such simple English that they have become classics in the eyes of the masses, who, after all, are the best judges. Besides this, Dr. Holmes's lyrics and prose writings always brought him near to American women. Pure in his instincts and personal nature, he particularly attracted all the female readers in the country, and this, in the United States, means success. His faith, rightly grounded, in the goodness and intelligence of all womankind, made him adored by the sex that always appreciates the man who sees them at their best. This is the secret of his popularity among school-children as a poet. It can be safely said that no school-teacher of New England extraction, North or South, but was familiar with all the good doctor's pretty verses, and taught them to her classes. It was Dr. Oliver Wendell Holmes who said: 'There are at least three saints among the women to one among the men'; and it was the same author who wrote: 'The brain woman never interests us like the heart woman, white roses please us less than the red.'

"Dr. Holmes never put a silly woman into one of his novels; his heroes are never as strong as his heroines. The only kind of woman Dr. Holmes could not understand nor appreciate was the strong-minded type. The maternal type, filled with love of home and children, with all the original gentleness of the sex, unspoilt by nineteenth-century ideas, yet wonderfully bright and active-minded, was his continual admiration."

INTESTINAL PARASITES IN BERI-BERI.

AT the Eighth International Congress of Hygiene and Demography at Budapest, Mr. J. H. Walker reported 1 his observations in 927 cases of beri-beri treated during the last five years at Sandakaw in British North Borneo. A careful examination of the stools for intestinal parasites was made in 887 of the cases, with the following results: The aukylostoma duodenalis was found in 756 cases, or 85.5 per cent.; the trichocephalus in 284 cases, or 31.5 per cent.; ascarides lumbricoides in 155, or 17.4 per cent.; oxyures vermiculares in 123 cases, or 13.8 per cent.; the distoma in two cases, 0.2 per cent.; acari in three cases, or 0.3 per cent.; various other parasites in 24 cases. or 2.6 per cent.

As the ankylostoma is not generally common among the native population, its frequency in these cases of beri-beri would appear to have some importance. Although there are several reasons why this parasite cannot be considered the pathogenic agent essential to beri-beri, it still may be a predisposing cause of a malady which its presence always aggravates. Mr. Walker looks upon the two diseases as having a common cause, inasmuch as the same conditions of sani-

tation and water-supply which favor the development of the ankylostoma are exceedingly good for the germ

These observations emphasize the importance of examining the stools of all persons ill with beri-beri, to detect the presence of entozoa, the expulsion of which is the first indication in the treatment of the disease.

M. PAUL BOURGET AND AMERICAN HOSPI-TALS FOR THE INSANE.

M. PAUL BOURGET, in a recent chapter of his account of American life and manners,1 relates his visit to the city institutions on Blackwell's and Ward's Islands, in New York Harbor. He was much impressed by the administration methods of the hospitals for the insane, and no less so by the method employed to control violent patients as told him by -, apparently a guide well informed as to the therapeutics and ethics of asylum treatment. His official relation to the hospital, if any, does not appear, and even M. Bourget hesitates to believe literally his kindly explanations.

Of the administration, M. Bourget says:

Both the houses are kept with that perfect understanding of comfortable material arrangements which distinguishes America and England. The principle is here — I had already noted it in visiting the hospitals of Boston to assure the autonomy of each establishment. It must be able to sustain itself from beginning to end. It must have its bakery to bake its bread, its laundry to wash its linen and iron it by machine, its laboratory in order to make up its own remedies. With such an independence in all the houses, the initiative is necessarily stronger. If there be an experiment to be tried, an invention to be applied, it is not necessary to pass through the administrative hierarchy and to await the central order. Everything has its compensation, and this absence of control, so admired by our routine, might well have its weak points. We have that impression in the few words which one of the doctors says to us with triumph. We ask permission to see the raving lunatics.

"We have none here," he replied.
"How is that?" we persisted.
"We have none," he repeated.

"But when those who are not so become furious?"

"Oh," said he, "we soon subdue them."

" May we see the apparatus?"

"We have no apparatus," said the doctor, proudly; we reckon that physical restraint is degrading for the patient; we prefer to employ chemical restraint."

"They drug them to death," said Mr. K.

Is he right? At any rate, after that phrase we always

imagine to find in the pupils of those we meet the stupefying dulness of opium or morphine, although the doctor asserts that those two substances are prohibited from the treatment. In all this hospital of madmen there reigns a silent terror.

THE CONTROL OF BOVINE TUBERCULOSIS.

THE Board of Cattle Commissioners of Massachusetts has announced the following line of action in its attempt to maintain stringent control over bovine tuberculosis, in the hope of eradicating the disease:

(1) Quarantine regulations upon cattle entering from without the borders of the Commonwealth.

¹ Outre Mer, chap. vi.

¹ La Semaine Médicale, September 19, 1894.

(2) Regulation of cattle traffic at Brighton, Watertown and Somerville, which shall include all animals from within and without the Commonwealth.

(3) Systematic inspection of all herds in the State, beginning at the Cape; followed by extermination of diseased animals, disinfection of contaminated premises,

and fixed quarantine regulations.

The stock-vards in Brighton and Watertown and the premises of the New England Dressed Beef & Wool Company in Somerville are designated as quarantine stations. All neat cattle entered at any quarantine station shall be immediately placed in quarantine, and so remain, at the expense of the owner or consignee, for a period of not less than twenty-four hours, and shall be subjected to the tuber-culin test. This test shall be made only by the board of cattle commissioners, or one of its members, or a duly authorized agent thereof, and without expense to the owner. All animals which upon such inspection shall be judged free from tuberculosis and other contagious disease shall be branded with the seal of the commission. This brand shall be placed upon the right horn and the outside of the right front hoof, on those animals having horns. Hornless cattle will be branded upon the right shoulder and upon the outside of the right front boof.

All neat cattle brought within the Commonwealth, consigned directly to the Brighton abattoir for slaughter, shall be confined by themselves for identification, and shall not be released except after an examination as above provided,

or except for immediate slaughter.

The Cape being the starting-point, the boards of health and all owners of neat cattle in the counties of Nantucket, Dukes and Barnstable will be immediately notified that from November until such time as they shall be released by the board or one of its members, all neat cattle are ordered quarantined upon the premises of their owners, and that boards of health will see that all orders of the board regarding the disinfection of premises are enforced within twenty-four hours after their receipt.

THE MALICIOUS USE OF SNAKE POISON.

THE tales of India are replete with references to wonderful and subtle poisons which act swiftly, surely and secretly, leaving no trace but the fate of their victim. Such were the fabled poisons of the East. Modern research, while it is destructive of much that is romantic in our knowledge of the past, is in this respect coming to the support of fable; for recent investigations point to the fact that these poisons may have been and probably were real, and not the exaggerated fiction of the story-teller. The modern application is less thrilling, to be sure, than in the tales of rajahs and princesses; for it is cows that suffer, and from dead cattle that the secret has been won.

The New York Medical Journal gives the following abstract of an editorial in the Indian Medico-Chirurgical Review of last July upon this interesting subject. The

editorial states that:

"It is not at all unusual for the various chemical analyzers' departments to receive pieces of rag removed from the rectums of dead cattle, and alleged to have been used for poisoning them. These rags have been received in Bombay and elsewhere, and on account of the non-detection of any of the known poisons the materials have been thrown away. The late Dr. Norman Chevers alludes to such cases, and quotes them as examples of the 'ignorant suspicions of the peasantry.' But it was reserved for Mr. Hankin to discover the fact that these suspicions were well grounded, and that the rags did contain one of the most virulent case and consulting his books, he announced that this

little ingenuity had been used by the ignorant and lowcaste Chamar of India. In his late report, the article goes on to say, Mr. Hankin describes how, after failing to detect any poison in a rag sent to him, he boiled a piece of it in nitric acid, and, on the liquid turning vellow, it struck him that the change of color was an indication of the presence of proteids, and he thought that snake poison might be present. He then injected a watery extract of about a square inch of rag into a rabbit, and the animal died with all the symptoms of snake-poisoning within about five minutes. By other tests, chiefly of a negative kind, he came to the conclusion that the intensely active poison found to be present was proteid in its nature, and very probably identical with snake poison. Mr. Hankin subsequently communicated with Sir Joseph Favrer, who stated that snake venom would be just as poisonous when placed in the rectum as when inserted under the skin, for it could be readily absorbed by any mucous membrane, and that it was only in the stomach that it became inert on account of the acidity destroying it. He also described a method of extracting snake poison as follows: A cobra is confined in a chattie underneath which a fire is lighted. A plantain is then put into the chattie, and the snake, being irritated by the heat, bites the plantain, which becomes thoroughly impregnated with cobra venom. But Sir Joseph Fayrer did not know for what purpose such a poisoned plantain could be used.

"Mr. Hankin found that the rags impregnated with snake poison were smeared over with a whitish, puttylike substance the nature of which he was not able to determine, but which, from experiments made by him, appeared to possess the same physical characters that crushed and dried plantains would have when spread on a dirty rag. Thus it seems that Mr. Hankin's original surmise was correct, and he has been able to discover this unique method of destroying cattle.

"The question naturally arises, whether snake venom has ever been used for poisoning man. Could any of the many mysterious deaths in India and elsewhere be thus accounted for? Could analogy lead to the solving of the problem of the poison employed to get rid of some hated enemy, who, it is said, used to succumb after a mere friendly hand-shake, or from a scratch of a nail conveniently placed on a windowsill? These are some of the thoughts suggested by Mr. Hankin's interesting report, and it might be well for him to follow up this discovery, and see whether human ingenuity would go so far as to utilize the poison on the human being."

THE ORIGIN OF THE PLAGUE IN CHINA.

ACCORDING to the native Chinese authorities the following is the true origin of the plague at Canton, BAYS Le Progrès Medical:

"In the private apartments of the dowager empress there are kept constantly burning eighteen lamps representing the eighteen provinces of the Empire. Some time before the outbreak of the plague one of these lamps burned unsteadily, and although cared for as were the others, was with difficulty kept lighted. The chief astrologer was at once summoned to investigate the phenomenon. After carefully studying the of animal poisons, for the extraction of which not a particular lamp which burned so poorly represented the province of Canton which would soon be afflicted with an epidemic which would carry off eight-tenths of the population.

"The empress was much affected by this reply, and asked if there were no possible means of saving the people of Canton from such a calamity. On being told by the astrologer that the god of disease might be appeased by prayers and offerings, the empress gave orders that nothing in the way of pacification should be spared.

"After prayers and sacrifices had been made, the astrologer again carefully prognosticated the case and declared that the god had consented to a compromise, which was all he would do under any conditions. According to this generous compromise, he would content himself with taking four-tenths of the men and the rest in rats. And this is the reason that men and rats were especially stricken by the disease at Canton and Hong Kong."

Correspondence.

ALMA MATER.

A SONNET BY OLIVER WENDELL HOLMES.

"Yes, home is sweet! and yet we needs must sigh, Restless until our longing souls have found Some realm beyond the fireside's narrow bound Where slippered ease and sleepy comfort lie, — Some fair ideal form that cannot die, By age dismantled and by change uncrowned, Else life creeps circling in the self-same round, And the low ceiling hides the lofty sky.

Ah, then to thee our truant hearts return, Dear Mother, Alma, Casta, — spotless, kind! Thy sacred walls a larger home we find, And still for thee thy wandering children yearn, While with undying fires thine altars burn Where all our holiest memories rest enshrined."

Boston, October 30, 1894.

MR. EDITOR: Your readers will probably be interested in the enclosed sonnet to Alma Mater written by Dr. Holmes in 1882, but never, as far as I know, included in any edition of his published works.

Having been invited to attend a dinner of the Harvard Club of New York, and foreseeing that I might be called upon to speak for the Medical School, I ventured to ask Dr. Holmes to write a few words of greeting to the Club for me to read in connection with any remarks I might make. The doctor kindly consented, and then added, "You don't want anything in verse, do you?" "Why, doctor," I replied, "I had not ventured to hope for anything of that sort, but, of course, if you could let me have a few verses, nothing could possibly be more delightful."—"Well," said he, "I'll see what I can do." A day or two later he handed me half a sheet of note paper on which was the enclosed sonnet, saying, "There, that's what I have written; see how you like it." Having hastily glanced through it, I expressed my delight and assured him that, with such a literary gem to present, my speech would be the event of the evening. "Now," said the doctor, "I want to hear how it will sound. Let me hear you read it." I then had to submit to the ordeal of reading a poet's lines to an audience limited to the poet himself.

Fortunately, I was able to acquit myself to his satisfaction, and a few days later the little poem was received with great enthusiasm by the sons of Harvard assembled in New York.

Yours very truly,

H. P. Bowditch, M.D.

METEOROLOGICAL RECORD,

For the week ending October 20th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

	Baro- meter	Thermom- eter.		Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r.			
Date.	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S14 M15 T16 W17 T18 F19 S20	29.51 29.96	54 44 49 58 51 55 64	62 60 66 59 68 76	46 38 38 50 43 42 53	91 54 59 45 66 73 72	60 68 60 47 71 82	76 52 64 52 56 72 77	S.W. W. S.W. W. W. N.E.	W. W. S.W. W. W. S.W. N.E.	6 22 10 21 16 5 10	18 15 16 15 9 14 8	C.F.OC.C.	0000000	

*O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., amoky; R., rain; T., threst ning; N., snow. † Indicates trace of rainfall ** Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, OCTOBER 20, 1894.

	į	the	, g	Percentage of deaths from						
Cities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Infectious diseases.	Consump- tion.	Diarrhoal diseases.	Typhoid fever.	Diphtheria and eroup.		
New York .	. 1,956,000	680	261	16.35	13.50	5.65	1.20	7.65		
Oblesse	. 1,438,000	—) —	-	_	_	-			
	1.139.457	385	124	23.76	13.50	2.97	2.70	17.28		
D 1 - 1	1,043,000	381	164	18.98	10.66	4.68	1.82	9.88		
St. Louis	540,800	-	-	_	_	_	l —	_		
D	501,107	220	73	21.15	13.95	2.60	1.60	12.15		
12-141	500,000	-	—	_	-	_	-	_		
FFF - 1 1 4	285,000	124	45	18.40	10.40	2.40	7.20	6.40		
C14	325,000	99	24	14.14	8.08	5.05	4.04	4.04		
Cleveland .	. 325,000		40	28.80	6.72	3.84	3.84	.96		
Tales - bearing	. 272,000		_	-	! -	-	_	_		
Milwaukee .	. 265,000	-	-	_	! —	-	_	_		
Nashville .	. 87,754	15	3	13.33	20.00	-	-	18.83		
Charleston .	65,165	1 -	—	_	I —	I —	-	_		
Portland	40,000	—	_	_	l –	-	-	_		
Worcester .	. 100,410	37	12	18.90	16.20	10.60	2.70	5.40		
Fall River .	92,233	26	10	23.10	26.95	11.55	8.85	8.85		
Lowell	, 90,613	34	16	82.34	14.70	23.52	2.94	5.88		
Cambridge .	. 79,607	27	14	33.33	11.11	22.20	8.70	7.40		
	. 65,123	11	4	54.54	9.09	27.27		18.18		
Springfield .	50,284	15	6	20.00	6.66	13.33	6.66			
Lawrence .	49,900	_	I -	_	_	-	-	I —		
New Bedford	47,741	8	5		_	I .	_	_		
Holyoke	43,348	15	4	57.28	13.33	1:,11	I –	-		
Brockton .	33,939	2	Ų	50.00			-	-		
	33,155	10	3	30.00	10.00	10.00	-	10.00		
Haverhill .	. 32,925	7	ò	05.00	-	_	-	_		
Malden	30,209	4	1	25.00		_	-	25.00		
Chelses	29,806	8	3	12.50	12.50	=	-	12.50		
	29,313	5	1	-	20.00	_	-	-		
	28,837	10	2	-	-	_	_	_		
Gloucester .	27,293	-	4	54.54	18.18	27.27	-			
Taunton	26,955	11			18.18	21.27	_	27.27		
Waltham .	22,058	8	2	37.50	-	_	-	37.50		
	19,642	9	1	i –	-	-		_		
Pittsfield .	18,802		i	_	=	_	_	_		
Everett	16,585		2	_	_	_		_		
Northampton	16,331	3	3	25.00	_	_	-			
Newburyport	14,073		ı	20,00	_	_	_	25.00		
Amesbury .	10,920	1		_	_	_	_	ı –		

Deaths reported 2,291: under five years of age 844; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 451, consumption 276, acute lung diseases 225, diphtheria and croup 215, diarrheal diseases 120, typhoid fever 52, scarlet fever 24, whooping-cough 17, cerebro-spinal meningitis 14, malarial fever 6, measles 2, erysipelas 1.

From scarlet fever Claveland 13 Boston 5 Now York 14

6, measles 2, erysipeias 1.

From scarlet fever Cleveland 13, Boston 5, New York and Philadelphia 2 each, Fall River and Salem 1 each. From whooping-cough Brooklyn 7, New York 6, Washington 2, Philadelphia and Boston 1 each. From cerebro-spinal meningitis Cleveland 4, Holyoke 3, New York and Boston 2 each, Washington, Cincinnati and Lynn 1 each. From malarial fever Brooklyn 3, New York, Cleveland and Brockton 1 each. From measles Cleveland.

In the thirty-three greater towns of England ar

an estimated population of 10,458,442, for the week ending October 13th, the death-rate was 16.7. Deaths reported 3,346; acute diseases of the respiratory organs (London) 241, diarrhea 117, diphtheria 92, measles 61, fever 61, scarlet fever 38, whooping-cough 32, small-pox (Liverpool 3, Birmingham 2) 5.

The death-rate ranged from 9.3 in Croydon to 26.2 in Preston; Birmingham 16.8, Bradford 17.7, Hull 16.9, Leeds 16.0, Leicester 12.7, Liverpool 23.1, London 15.5, Manchester 20.3, Newcastle-on-Tyne 17.3, Nottingham 16.3, Portsmouth 15.2, Sheffield 17.9, Swansea 18.6, West Ham 13.8, Wolverhampton 16.6.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 20, 1894, TO OCTOBER 26, 1894.

FIRST-LIEUT. CHARLES F. KIEFFER, assistant surgeon, will be relieved from duty at Fort Assinniboine, Montana, upon the return to that post of FIRST-LIEUT. EDWARD L. MUNSON, assistant surgeon, from duty in the field and will then report for duty at Fort Buford, North Dakota.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING OCTOBER 27, 1894.

- ${\bf J.~G.~AYERS,~surgeon,~from~Navy~Yard~and~Hospital,~Portsmouth,~N.~H.,~and~to~his~home~and~wait~orders.}$
- F. L. DuBois, medical inspector, ordered to Navy Yard and Hospital, Portsmouth, N. H.
- F. G. BRATHWAITE, assistant surgeon, ordered to temporary duty at Naval Hospital, New York.
- S. G. Evans, passed assistant surgeon, detached from Naval Hospital, New York, and to Naval Hospital, Mare Island, Cal., for temporary duty.
- M. R. PIGOTT, assistant surgeon, ordered to appear before Naval Examining Board at Navy Department, for examination preliminary to promotion.

HARVARD MEDICAL SCHOOL.

EVENING LECTURES.

The next lecture will be given on Thursday evening, November 8th, at 8 o'clock, by Dr. S. J. Mixter. Subject, "Surgery of the Intestine." Physicians are cordially invited.

MEDICAL EXCURSION TO BERMUDA.

Dr. J.B. Mattison, of Brooklyn, N. Y., is arranging another excursion of medical men to Bernauda, to sail Thursday, December 13th and return Thursday, January 3d. Specially low cost and other advantages offered for a delightful winter outing. Details, if desired.

SOCIETY NOTICES.

THE WARREN CLUB. - A regular meeting of the Club will be held at 28 Beacon Street, on Tuesday evening, November 6, held at 28 Beacon Burses, 1844, at 8 o'clock.

Dr. E. M. Greene: "Some Genito-Urinary Problems."

Dr. N. F. Chandler: "Cases of Albuminuria of Pregnancy."

JAMES G. MUMFORD, M.D., President.

W. E. PAUL, M.D., Secretary.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.—A regular meeting of the Society will be held at 19 Boylston Place on Monday evening, November 5th, at 8 p. m.

Dr. Henry Jackson will report "A Few Cases Illustrative of the Diagnostic Value of an Examination of the Blood."

Dr. George F. Jelly, "A Case of Mental Shock."

Three will be a buriness meeting of unusual importance.

There will be a business meeting of unusual importance.

JAMES G. MUMFORD, Secretary.

THE SUFFOLK DISTRICT MEDICAL SOCIETY, SURGICAL SEC-THE SUFFICIAL DISTRICT MEDICAL SOCIETY, SURGICAL SECTION. — The Surgical Section of the Suffolk District Medical Society will hold its regular monthly meeting at 19 Boylston Place, on Wednesday evening. November 7th, at 8 o'clock. "Intestinal Gangrene due to Embolism or Thrombosis of the Mesenteric Arteries, with Reports of Cases," Francis S. Watson M.D.

"Thrombosis of the Mesenteric Vessels; Successful Resection of Four Feet of Gangrenous Intestine." John W. Elliot, M.D.
C. L. Scudder, M.D., Secretary.

AMERICAN ACADEMY OF RAILWAY SURGEONS. - The first meeting of the American Academy of Railway Surgeons will be held in the parlors of the Grand Pacific Hotel, Chicago, Ill., on Friday and Saturday, November 9 and 10, 1894.

RECENT DEATH.

JOHN M. EVELETH, M.D., of Hallowell, Me., died in Augusta, Me., October 26th, aged sixty-six years. He graduated from Bowdoin College in 1849 and from the Maine Medical School in

BOOKS AND PAMPHLETS RECEIVED.

Charaka-Sambita. Part X. Translated into English and published by Avinash Chandra Kaviratna. Calcutta. 1894.

When All The Woods are Green. A Novel. By S. Weir Mitchell, M.D., LL.D., Harvard. New York: The Century Co. 1894.

Bloodless Vaginal Myomectomy. Massage in Gynecology. By Oscar J. Mayer, M.D., of San Francisco, Cal. Reprints.

Transactions of the American Surgical Association. Volume the twelfth. Edited by Dr. Forest Willard, M.D., Recorder of

Report of Committee on Car Sanitation; American Public Health Association, Annual Meeting in Montreal, 1891. By G. P. Conn. M.D.

The Senile Heart: Its Symptoms, Sequelse and Treatment. By George William Balfour, M.D., LL.D., F.R.C.P.E., F.R.S.E. New York and London: Macmillan & Co. 1894.

Medical and Surgical Reports of the Boston City Hospital. Fifth series. Edited by David W. Cheever, M.D.. George B. Shattuck, M.D., and Abner Post, M.D. Boston: Published by the Trustees. 1894.

Text-book of Anatomy and Physiology for Nurses. Compiled by Diana Clifford Kimber, Graduate of Bellevue Training School, Assistant Superintendent New York City Training School. New York: Macmillan & Co. 1894.

Prescribing and Treatment in the Diseases of Infants and Children. By Philip E. Muskett, Late Surgeon to the Sidney Hospital, etc. Third edition, revised, enlarged and rearranged. Edinburgh and London: Young J. Pentlane. 1894.

A Treatise on Appendicitis. By George R. Fowler, M.D., Examiner in Surgery, Medical Examining Board of the Regents of the University of the State of New York; Surgeon to St. Mary's Hospital, etc. Philadelphia: J. B. Lippincott Co. 1894.

Essentials of the Diseases of the Ear, Questions and Answers Prepared Especially for Students and Post Graduate Students, By E. B. Gleason, S.B., M.D., Clinical Professor of Otology, Medico-Chirurgical College, Philadelphia. Philadelphia: W. B. Saunders. 1894.

A Manual of Human Physiology, Prepared with Special Reference to Students of Medicine. By Joseph H. Raymond, A.M., M.D., Professor of Physiology and Hygiene in the Long Island College Hospital. With 102 illustrations in text and four full-page colored plates. Philadelphia: W. B. Saunders. 1894.

Annual of the Universal Medical Sciences; a Yearly Report Annual of the Universal Medical Sciences; a Yearly Report of the Progress of the General Sanitary Sciences throughout the World. Edited by Charles E. Sajous, M.D., and seventy associate editors, assisted by over two hundred corresponding editors, collaborators and correspondents. Illustrated with chromolithographs, engravings and maps. Philadelphia: The F. A. Davis Co. 1894.

Syllabus of Lectures on Human Embryology, an Introduction synabus of Lectures on Human Embryology, an introduction to the Study of Obstetrics and Gynecology; for Medical Students and Practitioners, with a Glossary of Embryological Terms. By Walter Porter Manton, M.D., Professor of Cinical Gynecology and Lecturer on Obstetrics in the Detroit College of Medicine. Illustrated with numerous outline drawings. Phila-Medicine. Illustrated with numeroudelphia: The F. A. Davis Co. 1894.

Recherches Cliniques et Thérapeutiques sur l'Epilepsie, l'Hystérie, l'Idiotic et l'Hydrocéphalie, Compte rendu du Service des Enfants, Idiots, Epileptiques et Arrièrés de Bicêtre Pendant l'Année, 1893. Par Bourneville, avec la Collaboration de MM. Boncourt, Cornet, Lenior, T. Noir et P. Sollier, Tome xiv, un beau volume de lxiv, 384 pages, avec 88 figures et un plan. Paris: Publication du Progrès Médical. 1894.

Diseases of the Chest, Throat and Nasal Cavities, Including Physical Diagnosis and Diseases of the Lungs, Heart and Aorts, Laryngology and Diseases of the Pharynx, Larynx, Nose, Thyroid Gland and Osophagus. By E. Fletcher Ingalls, A.M., M.D., Professor of Laryngology and Practice of Medicine, Rush Medical College, etc. Third edition, revised, with 240 illustrations. New York: William Wood & Co. 1894.

Hare's Text-Book of Practical Therapeutics. With Especial Reference to the Application of Remedial Measures to Disease and their Employment upon a Rational Basis. By Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. With special chapters by Drs. G. E. de Schweinitz, Edward Matria and Barton C. Hirst. New (4th) edition, thoroughly revised and much enlarged. In one octavo volume of 740 pages. Philadelphia: Lea Brothers & Co. 1894.

Original Articles.

CHRONIC ARSENICAL POISONING.

An Analysis of 260 Examinations of Urine.1

BY WILLIAM B. HILLS, M.D., Associate Professor of Chemistry, Harvard Medical School.

UP to within a few years, the importance of an analysis of the urine as an aid in the diagnosis of chronic arsenical poisoning from wall-papers and other domestic sources, had not, apparently, been generally recognized. Sanger has recently given the record of all the cases of this kind that he has been able to find in which arsenic was detected in the urine previous to 1886.2 These cases are twenty-four in number, and comprise four reported by Lorinzer in 1859,8 in which the analytical work was done by Kletzinsky; three reported by Müller in 1860,4 the analytical work being done by Fabian, who has also published the cases; 5 six published by Kirschgasser in 1868; 6 one by Clarke in 1873; five, in one of which the result was "doubtful." by Mörner in 1876; and one each by Jolin, in 1880, Welander, in 1880,10 Kjellberg, in 1881,11 Reichardt, in 1883,19 and Wood, in 1884.18 In some of these cases the results of the analysis are, in a measure, untrustworthy, because no assurance is given that the reagents employed were free from accidental traces of In those reported by Fabian, however, the arsenic. absolute freedom of the reagents from arsenic was established by careful analysis, and the results are, Sanger believes, reliable. The case reported by Clarke is the only one in which a quantitative analysis was made. Clarke obtained 0.26 gr. of arsenic from 48 oz. of urine (9 2 mgr. per litre). The method of analysis is not given; but the conclusion can hardly be avoided, that a considerable error was made by the analysts, since recent investigations show that the urine, in the class of cases under discussion, seldom contains more than 0.1 mgr. of arsenic, calculated as arsenious oxide, per litre.

At the present time, the necessity of an examination of the urine for arsenic in cases of suspected chronic poisoning is universally admitted, and many cases in which arsenic has been found in the urine have already been reported. The most important contributions are those of Putnam (25 cases), 14 and of Sanger (20 cases). 15 Nine of Putnam's cases were contributed by Sanger, and are found in Sanger's paper also. The total number given in the two papers is, therefore, 86. A few additional cases have been published elsewhere, or reported orally at meetings of societies.

Since 1887, I have myself made 260 analyses of urine for arsenic. The object of this paper is to place on record the results of these analyses, and to call attention to such facts as they suggest relative to the wide distribution of arsenic, even at the present time,

1 Read before the Boston Society for Medical Observation, May 7, 1894.
Proceedings of the American Academy of Arts and Sciences, vol.

3 Proceedings of the American Academy of Arts and Sciences, vxix, p. 148.
4 Wiener Med. Woch., 1859, Heften 43 and 44.
4 Wiener Woch., 1860, H. 18, 19, 20, 21.
5 Dingler, Polyt., Journ., elvii, 212.
6 Vierteljahr f., gericht. Med., N. F., ix, 96.
7 British Medical Journal, June 21, 1873.
4 Virchow-Hisch. Jahresb., xi, 405.
9 Hygeia, Stockholm, xlii, 236.
10 Jibid., xlii, 238.
11 Jibid., xliii, 238.
12 Archiv der Pharmacie., [3], xxi, 271.
13 Massachusetts State Board of Health Report, 1883, p. 237.
14 Boston Medical and Surgical Journal, exx, 235 and 253.
15 Loc. cit.

its elimination in cases in which small amounts have been taken into the system, and the action of such small amounts on the kidneys. I shall not introduce the clinical side of the cases represented by these analyses, since my knowledge of the history of most of the cases is more or less incomplete.

The method of analysis which I have employed, has been that first described by Sanger, by means of which the very minute amounts of arsenic that occur in the urine in this class of cases can be estimated quantitatively.16 The purity of the reagents and apparatus used has been repeatedly proved by careful

My 260 analyses represent 180 cases. Of these 180 cases, in 135, or 75 per cent., the urine contained arsenic. I have found a record of but one earlier investigation in which the frequency of the occurrence of arsenic in the system has been studied. Putnam collected more than 150 samples of urine, of which Worcester found over 30 per cent. arsenical.17 There is a great difference in the percentage of arsenical urines in the two series. Putuam, however, selected, chiefly, cases in which there were no symptoms referable to arsenical poisoning; while a majority of my own cases were those in which there were symptoms which suggested to the attending physician the possibility of arsenic as a factor in their causation. vided the cases in the two series were judiciously selected, we should expect this, perhaps even a greater difference, in the analytical results. No claim is made, however, that all the cases represented by my analyses were cases of arsenical poisoning. In many of them the arsenical origin of the symptoms was substantially proved. In certain cases the arsenic was apparently one, among other causes, operating to produce or pro-long a state of ill health. In many cases the presence of arsenic in the system was, doubtless, a mere coincidence.

Nearly all of my analyses have been made within the past three years. The results show, therefore, that, notwithstanding the great improvement which has taken place within recent years in the character of wall-papers and fabrics, arsenic is still widely distributed under conditions favorable for its absorption into the system.

My observations in several cases which have come to my notice have convinced me that there are probable sources of chronic arsenical poisoning which have not yet been properly investigated. I have, for instance, records of eleven cases in each of which I have made analyses of the urine at short intervals for a period extending over one and one-half to two years. In no one of these cases has the urine ever been quite free from arsenic when it has come under my observation. Usually the quantity has been small: 0.01 mgm. per litre, or thereabouts. In one case, however, the quantity has invariably been 0.03 to 0.04 mgm. per litre; in another, 0.05 mgm. or over. In five of these eleven cases I have found, on a single occasion, a decidedly larger quantity of arsenic than is usually present; in one instance 0.1 mgm., in a second between 0.2 and 0.3 mgm. per litre. Yet, so far as I have been able to discover, the houses occupied by these patients have not contained any arsenical materials of the ordinary kinds for at least a year and a half. In all these cases no labor or expense has been spared in getting

xxvi, 24.

17 Boston Medical and Surgical Journal, exxiv, p. 623.

¹⁶ Proceedings of the American Academy of Arts and Sciences,

rid of arsenic in the first place, and in keeping it out of the house, so far as possible, subsequently. How then are we to explain: first, the constant presence of a minute quantity of arsenic in the urine; second, the occasional occurrence of a far greater quantity than is usually present? In one case the larger quantity present on a single occasion may have been the result of a fresh exposure to arsenical papers during the summer. similar explanation does not apparently apply to any of the remaining cases.

A few weeks ago, a patient in whose urine I had always found a minute trace of arsenic, handed me a specimen which gave 0.2 to 0.3 mgm. per litre. urine contained at the same time copper. ably, therefore, the arsenic had been taken into the connection with some article of food.

I have not observed the presence of copper in the urine in any of the remaining cases in which I have found an exceptionally large amount of arsenic; but I have not looked for it. It is possible, however, that we may have, in the free use of Paris-green in the garden and field, one explanation of the frequent occurrence of arsenic in the system. The soil in many localities is doubtless quite highly impregnated with the poison. The question of its absorption by growing vegetables is, in my opinion, one which should be carefully investigated.

Among other possible sources is coal. This was first pointed out, I believe, by Prof. J. M. Crafts, who stated that the dust from chimney flues had been found to contain large quantities of arsenic.18 Professor Crafts suggested the desirability of collecting statistics relative to the presence of arsenic in the urine of certain classes of persons exposed to arsenic in different degrees, instancing chimney-sweeps. This suggestion seems to me an important one, but it has not yet, I believe, received any attention. arsenic is a constituent of coal, it must be liberated, during the process of combustion, in the form of arsenious oxide. The opportunities for the absorption of arsenic, under such conditions are obvious.

A few months ago Dr. H. H. A. Beach suggested to me the possibility that illuminating gas may be one of the sources of the arsenic so frequently present in the system. Dr. Beach is quite certain that illuminating gas has at times a distinct garlicky odor, and he days after the administration of the poison. suggested the desirability of an investigation relative to the presence of arsenic therein. I have since noticed this garlicky odor on at least three occasions. It is certainly not constant or even common. my observation, it is perceptible, for an instant only, when the gas is first let on and before it is ignited. have made two tests of the gas supplied to Boston for arsenic but with a negative result in each case. I am not altogether convinced that the method employed was a suitable one, and I intend to continue the investigation. If arsenic is a constituent of the coal used in the manufacture of the gas, it probably exists in the gas, provided it escapes the purification process, in the form of arseniuretted hydrogen, which latter furnishes upon conbustion arsenious oxide.

ELIMINATION OF ARSENIC.

The elimination of arsenic in the class of cases under consideration is a subject which requires careful

18 Boston Medical and Surgical Journal, exxiv, p. 638 and exxv, p.

investigation. It is a matter of quite common observation that certain individuals are unaffected, to all appearances, by prolonged exposure to highly arsenical papers, while others suffer severely from comparatively slight exposures. Doubtless the form in which the arsenic is absorbed is a factor in determining such variations. It is not improbable, however, that some of these cases of unusual susceptibility are dependent in part, if not entirely, upon slow or irregular elimination and consequent accumulation of arsenic in the system. Inasmuch as arsenic escapes from the system in large part through the kidneys, we have in the examination of the urine the best, and in fact the only satisfactory means of studying elimination.

In the analyses which I have made the quantity of system in the form of Paris-green, and probably in arsenic has varied (206 cases) from 0.003 to 0.3 mgm. In only eight instances, however, has it reached 0.1 mgm. per litre. In six of these the quantity was 0.1 to 0.15 mgm.; in one, 0.2 mgm, approximately; in one, 0.8 mgm., approximately. These results agree, substantially, with those obtained by other investigators. In Worcester's analyses, as given by Putnam, the quantity varied from 0.005 to 0.1 mgm. per litre. 19 In Sanger's analyses, 0.002 to 0.068 mgm. per litre.

We may safely conclude then that the quantity of arsenic eliminated daily by the kidneys in cases of this kind is usually very small, and, as a rule, less than 0.1 mgm. per litre, of urine. Occasionally the urine contains a distinctly larger amount. The significance of these relatively large amounts is uncertain. sumably an unusually large quantity of arsenic has In one of my own been absorbed from some source. cases, for example, the association of copper with the arsenic in the urine, suggested Paris green as the probable source. If such was the case, it was doubtless ingested with some article of food. The possibility of an accumulation of arsenic in the system, under conditions as yet unknown must, however, be admitted.

The time required for the elimination of arsenic has not been sufficiently studied. The opinion has been generally entertained, until recently, that elimination is usually completed within two or three weeks. The number of cases recorded in which the time of elimination was more protracted is very small. instance, detected arsenic in the liver of a dog forty

In the case of chronic poisoning from Fowler's solution, reported by Gaillard, arsenic was detected in the urine six and one-half weeks after the last administration. Seven and one-half weeks after the administration of the drug no arsenic could be detected in the urine.20 Gibb reported a case in which "traces" of arsenic were found in the liver and bones seven months after the cessation of a course of treatment with arsenic extending over several years. No arsenic was detected in any of the remaining organs or in the blood. The report of the analytical work in this case is brief and unsatisfactory.21

The methods of analysis employed in most of the cases hitherto reported have been such as are usually employed for the analysis of the tissues in cases of suspected poisoning. None of these processes are sufficiently delicate to permit the detection of such minute quantities of arsenic as the tissues and fluids of

Loc. cit.
 Annales d'Hygiene, October, 1874.
 Transactions of the Pathological Society of London, vol. 9, p. 442.

the body presumably contain towards the close of the period of elimination.

Wood has recently reported a case of acute arsenious oxide poisoning in which, using the more delicate process, as described by Sanger, he detected arsenic in the urine for the last time 93 days after the drug was He also reports two cases in which Fowler's solution was taken. minims were taken during three days; in the second, sixty-nine minims during seven days. The time required for complete elimination was 58 and 82 days respectively.²² These cases are the only ones thus far recorded, so far as I know, in which the elimination of arsenic has been followed to actual completion. It remains for future investigation to determine whether such long periods are the exception or the rule.

There are but few cases on record in which the time of elimination in cases of domestic poisoning has been investigated. In Sanger's historical sketch, cases are given in which the urine was found free from arsenic after 37 and 62 days (Fabian), one month (Mörner), and two months (Kjellberg).28 In one of Kirschgasser's cases, quoted by Sanger, the urine, collected six weeks after the removal of an arsenical paint to which the patient had been exposed, was found free from arsenic. Arsenic was, however, detected in the feces collected two weeks later. The methods of analysis employed in these cases lacked delicacy; and, in the absence of any assurance that the surroundings of the patients were free from areenic during the whole period of investigation, it is doubtful if the cases have any value as bearing upon the time of elimination.

Sanger 24 has reported several cases of wall-paper poisoning in which the question of elimination was studied. The elimination was not examined to completion in any of his cases; but the time after which arsenic still appeared in the urine varied from 19 to 140 days. He concludes, therefore, that the elimination of arsenic by the kidneys in wall-paper poisoning is very slow. His cases are inconclusive, however, since there is no evidence of the freedom of the patients from exposure to arsenic while they were under observation.

Among my own cases are a few in which nonarsenical surroundings were presumably secured, inasmuch as the urine became free from arsenic, following the removal of the probable sources. These cases are as follows:

CASES I and II. A child and his nurse presented symptoms which suggested to the attending physician the probability of arsenical poisoning. The urine of both patients was analyzed, and a "trace" of arsenic (quantity not recorded) was found in each. Upon investigation, it was found that the paper in the room occupied by the child and nurse was arsenical. remaining papers in the house were free from areenic. The patients were transferred to another room, and the urine of both, analyzed twenty three days later, was found to be free from arsenic.

CASE III. September 3, 1890, the urine contained a "large trace" (quantity not recorded) of arsenic. Several papers in the country house occupied by the patient were found to be very arsenical. About a week after the detection of arsenic in the urine the patient returned to his city house which is believed to be free from arsenic. Arsenic was detected in the urine for the last time, December 8th. The urine was free from arsenic December 24th, and December 29th. The time required for its complete elimination was more than eighty days (between eighty and ninety-

CASE IV. April 19, 1893, the urine contained ap-In the first case twenty-seven proximately 0.3 mgm. of arsenic per litre. The dining-room paper was source is uncertain. highly arsenical, and the paints in some of the rooms contained a little arsenic, otherwise no arsenic could be detected in the patient's surroundings. The patient left home about a week after the first analysis was made. May 10th, the urine contained 0.025 mgm. of arsenic per litre; June 1st, 0.02 mgm.; June 29th (sixty-four days), it was found to be free from arsenic.

CASE V. December 11, 1892, the urine contained 0.03 mgm. of arsenic per litre. January 6, 1893 (twenty-six days), it was found to be absolutely free from arsenic, and remained free eight days later. The arsenic in this case could not be traced to any source. Papers, paints, upholsteries and dress materials were tested with a negative result. The urine of another member of the family was analyzed December 17th, and found to be free from arsenic. The source of the arsenic, and, consequently, the date of the last exposure, being unknown, I am not disposed to attach much importance to the case as one illustrating the time of elimination.

CASE VI. December 27, 1887, the urine contained 0.02 mgm. of arsenic per litre; March 15, 1888 (seventy-nine days), the urine was free from arsenic.

CASE VII. June 12, 1891, the urine contained a "large trace" (quantity not recorded) of arsenic; August 31st (eighty days), free from arsenic; September 14th, free from arsenic.

April 19, 1892, the urine contained CASE VIII. 0.015 mgm. of arsenic per litre; June 20th (sixty-one days), free from arsenic. Several analyses of the urine have been made since with a negative result in each

CASE IX. April 29, 1892, the urine contained 0.02 mgm. of arsenic per litre; June 20th (fifty-one days), free from arsenic.

CASE X. December 26, 1893, the urine contained 0.03 mgm. of arsenic per litre; January 25, 1894 (thirty days), the quantity of arsenic present was less than 0.003 mgm. per litre; March 28th (ninety-one days), the urine was free from arsenic.

In Cases VI to X inclusive, the analyses are separated by such wide intervals in each case that the time actually required for complete elimination cannot be stated with exactness. The only conclusion which can be reached in these cases is that elimination was completed within the periods named.

The investigation of this subject is, in fact, attended with considerable difficulties in private practice. It is but seldom that specimens of urine can be obtained with sufficient frequency to enable one to draw any valuable conclusions from the results of the analyses; and it is very difficult apparently to secure absolutely non-arsenical surroundings for the patient. All questions relative to the elimination of arsenic can best be investigated, I believe, in the wards of hospitals, where the surroundings are presumably non-arsenical, the conditions known, and the patients and materials under control.

(To be continued.)

<sup>Boston Medical and Surgical Journal, April 27, 1893.
Loc. cit.
Loc. cit.</sup>

ACUTE INFANTILE ARTHRITIS IN THE HIP.1

BY AUGUSTUS THORNDING MID

(Concluded from No. 18, p. 435.)

ANATOMY OF INFANTILE HIP AND ITS INFLUENCE ON SUPPURATIVE INFLAMMATION.

The anatomy of the infantile hip-joint differs materially from that of the adult. On the side of the pelvis at birth the greater part of the acetabulum, the crest of the ilium, the tuberosities and ramus of the ischium, the body and inferior ramus of the pelvis are still cartilaginous. Ossification, however, from three primary centres has extended into the margin of the acetabulum. In the femur the entire upper part of the bone is at birth cartilaginous, only the extreme lower part of the neck being composed of bone. Quain gives the time for the appearance of the centre of ossification for the head of the femur during the first year of life. Rénault and Rambaud say it may show two small centres of ossification as early as twenty days after birth.

At birth the capsule is therefore inserted into a cartilaginous end of femur, except possibly over a small area on the lower surface of the neck. The epiphyseal cartilages increase in all directions by interstitial growth. The bones increase in length solely by means of ossification at that part of the epiphyseal cartilage which is in proximity with the diaphysis; just there the line of newly formed bone and the cartilage is extremely vascular; not only do numerous small vessels penetrate the cartilage through the layer of newly forming bone, but there is a rich venous plexus in the periosteum surrounding the junction of the shaft and the cartilaginous epiphysis.

The centre of ossification for the epiphysis of the femoral head is contained well within the insertion of the capsule of the joint: so that if this isolated portion of bone suppurates one can be fairly certain that a purulent synovitis will follow. Earlier writers regard acute arthritis as a pyemia of bone. Howard Marsh 18 says the pathology of the affection is obscure; it begins somewhere near the dividing line between epiphysis and shaft as an hyperemia, soon followed by inflammation and rapid pus formation. Suppose, for example, that inflammation begins in the line of newly formed bone at the upper end of the shaft of the femur. The epiphyseal cartilage, owing to the peculiar growth of the diaphysis, is cup-shaped during infancy and receives the end of the shaft of the femur within it. If pus is formed it must be directed through the cartilage, or else be deflected by it; in the latter case it will either separate the periosteum or extend downward and set up a general osteomyelitis of

The great vascularity of the terminal cartilages of the long bones during infancy, appears to the writer to offer an easy route for the transmission of any infectious inflammatory process from the bone to the joint, whereas the almost non-vascular articular cartilages of adolescents and adults act for a long time as an efficient barrier and protection to the joint against invasion from this quarter. It is easy to see how suppuration between the shaft and epiphysis may produce a separation of the epiphysis, a condition not infrequently found. It is also easy to understand on

purely anatomical grounds how a colony of pyogenic bacteria growing there may spread into the cartilage following the lymph and perivascular spaces of the vessels which nourish the ossific centre, giving rise either to an abscess which will ultimately break into the joint, or reaching and growing along the perivascular spaces of vessels which enter the head of the femur through its ligamentous attachments, may infect the joint without causing an abscess around the centre of ossification. Be it remembered that these same vessels may carry as emboli colonies of pyogenic bacteria ready to give rise to inflammation and suppuration wherever they may tarry. That is to say, any infectious juxta-epiphyseal inflammation may be expected to cause further infection through one or more of the following channels:

(1) By producing in the cartilage and ossific centre a new abscess ready to break into the joint; for example, the sub-articular abscesses described by Mr.

(2) By direct bacterial growth along lymphatic and perivascular spaces infecting the joint directly without epiphyseal abscess.

(3) Suppuration may extend downward along the shaft separating the periosteum and bone, producing secondary periostitis and necrosis, or

(4) It may extend down into the diaphysis producing a general osteomyelitis.

There is also a chance that a suppurative inflammation of the bone may find its way through the periosteum at some point outside of the capsule, and thus give rise to a suppurative peri-arthritis without syucvitis. It would be hardly proper to speak of such a

BACTERIOLOGY.

case as one of acute arthritis.

Cousiderable interest has lately been shown in the bacteria which have been found both in the bone-marrow in acute osteomyelitis and in the joint-pus of acute arthritis.

Krause in 1884 found the staphylococcus aureus in the bone-marrow, and both staphylococci and streptococci in the joint-pus, the latter resembling Löffler's diphtheria coccus. He corroborates Rosenbach's and Becker's experiments producing in animals suppurative fractures and joint lesions by injecting pure cultures of staphylococci, and sometimes producing osteomyelitis and joint abscess in animals without a previously inflicted trauma.

Littens¹⁹ found cocci and bacilli in a suppurative synovitis following scarlet fever. L. Brieger 20 found in the joint-pus of acute arthritis both staphylococci and streptococci. Hocksinger 21 found streptococci in the joint-pus of scarlet fever. Lannelongue and Achard 22 found a streptococcus in acute arthritis which they were able to cultivate, and they finally produced with it in animals an osteomyelitis without trauma just as Krause had done with staphylococci. Together with Courmont, Jaboulet and Rodet they turned their attention to further animal experiments with the result that they believe an artificial osteomyelitis may be produced by injections of pure cultures of any of the following micro-organisms: streptococcus pyogenes, staphylococcus aureus, staphylococcus albus, Fränkel's pneumonia diplococcus, and that without inflicting any

¹ Read before the Boston Society for Medical Improvement, April 23, 1894.

18 Diseases of Joints, American edition. 1886.

Alig. Woch., 1884, vol. vii, No. 44.
 Zeitschrift für Klin. Med., 1886.
 Wiener Alig. Zeit., 1887.
 Comptes Rendus de L'Acad. de Sciences, 1890, vol. cx, p. 509.

fracture of the bone, as in Becker's and most of Krause's experiments. More recently Henry Koplik 28 studied at the Carnegie Laboratory in New York the joint-pus from four cases of acute arthritis in infants, one of them beginning during the third week of an attack of scarlet fever. All had several joints affected. They were aspirated aseptically before making any incision, and the cultures were made from the aspirated pus. A form of streptococcus alone was found. Animal experiments were made on white mice and on rabbits. The mice died after a few days without joint inflammation. Streptococci could be distinguished in their blood. Rabbits reacted only to injections of pure cultures into the circulation. They usually died and most of them had pus in one or more joints together with osteomyelitis. English surgeons, like Owen and Battle, assert that staphylococcus aureus is almost invariably present and streptococcus only occasionally; Koplik's careful work on this subject would imply that the reverse may be nearer the truth.

In the case reported in this paper, Dr. C. A. Porter stained and examined two cover-glasses smeared with the pus. Numerous streptococci were found. I regret extremely that no cultures were made.

ETIOLOGY.

The etiology of the affection appears at first sight to have been very much simplified by this recent bacteriological work; one is tempted to say that whenever pyogenic organisms gain access to a baby's blood, an attack of acute arthritis must inevitably follow. There are, however, several predisposing factors to be cou-Traumatism plays a part in causing a few of the recorded cases; in one of Mr. Thomas Smith's a difficult version during the birth of the child was attributed as the cause of an acute arthritis of the hip. Another child was swung by the arm by its mother who was suffering from puerperal mania, and the shoulder-joint was affected. In another case arthritis of the knee was attributed to a fall from the cradle. There are still other traumatic cases on record, but as the hip is better protected than the knee traumatism is not so often mentioned as a cause.

Lovett 24 says, "Any injury may be enough to locate a destructive process in some one joint, or, on the other hand, so far as can be told, the disease may originate without traumatism.

Infection, of course, plays the chief rôle in the etiology, and the question of the port of entry for the micro-organisms is an interesting one. Wounds of all sorts or any lesion of continuity in the skin or mucous membranes may offer the necessary access for infection. Among the cases on record such lesions are rarely mentioned. Ulceration at the umbilious occurred in one of Townsend's and two of Koplik's cases. It was also present in some of those at the Hospital for Sick Children in London. A pre-existing empyema also occurred twice. It is, of course, frequently impossible to ascertain the port of entry.

In the exanthemata and in all the acute infectious diseases pyemic infections are not unusual, and acute destructive joint-disease occurs both in older children and in babies. Acute arthritis of infants is one of the forms of this infection and several recorded cases are traced to chicken-pox, variola, measles and scarlatina, and finally parotitis and typhoid fever.

The definite etiological character of these joint affections is still obscure. Those of measles and scarlet fever are said to resemble each other. Roswell Park 25 reminds us that the common form of scarlatinal arthritis is not purulent. It appears as a simple synovitis, an over-secretion of synovial fluid. It is possible for the capsule to become so much distended that a chronic hydrops may result with more or less flail-joint. Gutterbock once saw in a seven-year-old girl a spontaneous dislocation of the hip from this cause, and Park also had a similar case, but this is

Marie Raskin 26 has found streptococci in abscesses complicating scarlet fever in older children, also in cultures made of the pus from their joints, whereas in the pus from the discharge from the middle ear she found both staphylococci and streptococci mixed. She concludes that the chain-cocci are the active agents in secondary purulent infection after scarlatina, but that they have nothing to do with the fever itself, and their probable ports of entry are the inflamed tissues of the

Roswell Park speaking of affections of the joints and bones occurring in typhoid fever, says: "Inasmuch as this topic has been of late carefully studied as to its biological aspects, we may now say that there is no such thing as post-typhoidal rheumatism of bone or joint, but all such cases are to be ranked either as primary or mixed infections whether occurring in bone or in joint cavities, and that while in a few instances the pus therefrom has been found to be almost a pure culture of typhoid bacilli, the majority of these cases are genuine mixed infections."

I have so far failed to find any bacteriological classifications of the arthritis of varicella, variola and paroti-

The pathology of all of these joint diseases is still obscure, but it is probable that when purulent they are due to a secondary pyogenic infection, that the typhoid bacilli or the other specific micro-organism may produce some change which either facilitates the growth of the secondary pyogenic cocci, or else lessens the infant's capacity of elimitating and destroying them.

Two other diseases are said to cause acute arthritis in infants, or at any rate a joint affection so like to it that their clinical recognition may be very difficult tuberculosis and inherited syphilis. Two suppositions are possible in regard to them; either the tuberculous or gummatous grannulomata, may grow in the diaphysis close to the epiphyseal line, and there give rise to the same inflammations as in older children (only more acute owing to the great vascularity and rapid growth of the infant's bone), and lead eventually to a suppurative synovitis; or secondly, these diseases may act as a predisposing cause to render the infant less able to eliminate and destroy pyogenic micro-organisms in the blood. All that I have been able to find in regard to the co-existence of syphilis and tuberculosis with acute arthritis, is that a tubercular or syphilitic history has been obtained in several cases from the parents, and that once or twice skin affections, presumably due to syphilis, have been seen on the infant; also in regard to tuberculosis, empyema and a serous pleurisy have been known to precede or accompany infantile arthritis. Judging by the clinical records alone, in the absence of pathological data, tuberculosis and

American Journal of Medical Sciences, April, 1892.
 Etiology, Pathology and Treatment of Diseases of the Hip, Boston, 1891.

Mütter Lectures, Philadelphia, 1893.
 Centralblatt für Bact., 1889, 5, p. 296.

syphilis must be considered to exert at times a predisposing influence in the production of some cases, but it is at present impossible to define more clearly in what

proportion of cases this is true.

Finally, it must be remembered that an acute serous synovitis, changing rapidly into a suppurative one, may give rise to precisely the same symptoms and physical signs as a local osteomyelitis rapidly followed by suppuration of the neighboring joint, especially in little babies, and that the acute diseases just mentioned, - chicken-pox, measles, scarlet fever, smallpox and typhoid fever, - may cause a simple serous synovitis as well as an infectious one with or without the art of poisoning by organic alkaloids is of a com-

To recapitulate, the primary causative factor in acute arthritis is to-day believed to consist of an acute infection of pyogenic micro-organisms. This infectious matter may enter through any damaged surface of skin or mucous membrane or any subcutaneous phlegmon. Other predisposing causes may also exert an influence. Of these traumatism acts principally to determine in which joint the affection shall manifest itself. The injury may be a slight one, and traumatism acts less | iar to them; and Chicago Jack when on the witness frequently in the hip than in the more exposed joints. The infectious diseases, scarlet fever, measles, chickenpox, variola, typhoid fever and parotitis may accompany or precede an attack of acute arthritis; their rôle is still very imperfectly understood, and the same may be said of tuberculosis and syphilis. They may act either in making easy the entrance for the pyogenic germs, or in reducing the patient's capacity for destroying and eliminating them. Since specific germs of typhoid fever have been found during the fever, both in osteomyelitic marrow and joint pus, it is possible that the typhoid bacillus may occasionally be a pyogenic factor. Tuberculosis and syphilis may predispose to the affection. An acute infectious suppurative synovitis without lesion of bone may also simulate very closely what is usually regarded as the ordinary form of acute arthritis.

CHEMICAL IMPORTANCE OF THE PTOMAINES OR CADAVERIC ALKALOIDS IN MEDICO-LEGAL ANALYSIS.

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THE great advancement that has been made in physiological chemistry of late years has materially affected some of the views formerly entertained by our older investigators, as the result of the actual experiments of the many workers in that important field of scientific research has added much to the work of the toxicologist. It is at present a well-known fact, that the excretions of all living things contain substances that are poisonous to the organism which secretes it. Thus, for example, a person may be carefully dieted, and allowed to drink only absolutely pure water, eat food of the very best quality, and breathe the purest air, yet in the excreta can be and has been found poison. Now where does this poison originate, and what are its effects on the system in its various transformations? Is the presence of such poison and its products not easily mistaken, in cases of medicolegal analysis, and liable to cause error on the chemist's part, by the use of certain tests, to ascertain the

pecially as the quantity operated on is usually small," by the presence of these he might be unconsciously led into error. There is abundant evidence that such has been the case; and possibly some innocent life may have been sacrificed by the finding of poison that was due to natural causes, and which already existed in the body or originated after death by the processes of putrefaction, which, by the delicate color-reaction tests, may have been mistaken for that of administered poison of the vegetable alkaloids. But, fortunately, the chemical analysis was generally regarded in former years as a link in the chain of evidence; and as parative recent origin, it requires little or no comment as toxicologists have thoroughly proven themselves equal to the difficulty.

In the recent celebrated Dr. Meyer poisoning case, in which I was associated with Professor Witthaus as defence chemist, during the second trial, we found that Dr. Meyer and his vile associates were not familiar with the use of alkaloidal poisons. The dreadful vocation of poisoning in every other form was familstand surprised all by his cold-blooded testimony. "He said that he had suggested to Dr. Meyer, that he should use nitro glycerine to accomplish his purpose, as it was in his experience the best drug to use, because a chemist could more easily be deceived by it. He stated that the way to work it was to engage a boat on a warm day, entice the victim to go for a row, give him a drink of whiskey dosed with nitro-glycerine, and then set him adrift; when discovered dead, they would pronounce it a case of death from sun-stroke. He had practised the use of different poisons on poor tramps in the slums of Chicago, and the nitro-glycerine was the surest and best." Yet by turning State's evidence, this wretch enjoys his freedom in this free land.

The microscope has revealed to us the size and shape of the various cells of which our bodies are composed; but in the study of these elements of life, we must not be forgetful of the fact that they have a chemistry as well. The life of the cells is influenced by their surroundings. They grow, and perform their allotted work, when supplied with the proper pabulum, and become injured when the product of their own activity collects around them. This poison, therefore, originates in the metabolic changes, which splits up the organic molecules into their simpler parts, the final result being urea, ammonia, water and carbondioxide. That during this process of change some of the intermediate products are highly poisonous, is already well established. The difference in quantity and quality depends on the nature of the proteid acted on, and the force with which the action takes place. The human body resembles a colony of fungi or cells, which, when their functions are not interrupted, are normal, so to speak. Each cell changes its environments into itself and the products of its secreta. Thus our whole body really lives by the joint ferments of its structure, each cell, or group of cells, supplying its special functions. Any cause by which the cells are prevented from doing their allotted work produces disease, the study as to the causes of which has of late assumed great importance. As the methods of many of the pathogenic bacteria are due to the production of this form of poison, and as it is found to exist in the dead body, it has received the presence of the poisonous vegetable alkaloids? "Es- name "Ptomaine." All putrefaction is now considered due to the action of bacteria. The results of the growth of these organisms form a very complex class of substances which are known as ptomaines, or cadaveric alkaloids. They are produced from albuminoid substances by the influence of putrefactive decay. Unfortunately, they bear a very marked resemblance in many ways to the class of substances known as the vegetable alkaloids, both in general character and chemical behavior. There has been separated up to the present time about sixty separate ptomaines. Each of these has been so thoroughly studied that its respective chemical formula is already known. Some are intensely poisonous, while others are inert. will not attempt in this short paper to enter minutely into the special actions and the respective tests allotted to each, by which each can be recognized without doubt, but will present to you the method by which these ptomaines can be isolated, and arrange these into classes according to their behavior and solvents, and also give some of the individual tests whereby, in the same solvent, the identity between ptomaines and vegetable alkaloids can be established.

These ptomaines, or cadaveric alkaloids as they are sometimes called, possess all the characters of the vegetable alkaloids, are alkaline in reaction, and combine with the acids and form salts. Some are liquid, some solid, others crystalline. Some are very poisonous, while others are not. Their behavior towards the general reagents for alkaloids is similar to that of those used for the vegetable in many respects. From their very origin, there is great difficulty in the separation of these cadaveric alkaloids or ptomaines, ou account of the complex nature of other substances and the great numbers associated in the decomposing mass. Many methods have been devised, but the one most commendable is as follows, which has been used with success by that famous Italian investigator, Pro-

fessor Selmi, and others.

SEPARATION OF THE PTOMAINES.

The material is divided as finely as possible and placed in a suitable-sized flask, to which is added twice its volume of ninety-per-cent. alcohol. If not already acid, acidulate it with tartaric acid, and from time to time see that it is acid in reaction. This flask is now connected with a reflux condenser, placed on a waterbath, and kept at a constant temperature of 70° for twenty-four hours. The warm liquid is then transferred to a special apparatus for filtering by the aid of The liquid is poured on a atmospheric pressure. damp cloth, placed on a perforated porcelain funnel, which is connected below with a receiver, from which all air has been exhausted by an aspirator, thus securing rapid filtration; and by the repeated washings, the mass is thoroughly exhausted. This acid alcoholic liquid is now transferred to the following apparatus. A tubulated retort, of suitable size is connected to a tubulated receiver, by means of a suitable cork covered with membrane to exclude air. In the tubule of the retort a small perforated cork is placed, through which runs a glass tube extending near the bottom and finally drawn out at the lower end. The tubule of the receiver is connected with a Liebig bulb, containing dilute H₂SO₄ (1 to 10) and the bulbs are connected with an aspirator, by which means a fine current of air is drawn through the liquid and keeps it constantly agitated. The retort is kept on the waterbath at a temperature of 28° to 30°. The receiver is

kept cool by a current of water passing over it. this way the distillation of alcohol goes on rapidly, and decomposition is so far prevented that volatile bases are never found in the bulbs. The aqueous extract, after the removal of alcohol by the distillation, is filtered and extracted with ether as long as anything is dissolved. It is then mixed with powdered glass and evaporated to dryness in vacuo. This residue is repeatedly extracted with alcohol, and the alcohol is again distilled by the process above described. The residue is then taken up with distilled water, and filtered; then it is made alkaline with sodium bicarbonate, and repeatedly extracted with ether, benzine and chloroform. Now, in order to obtain the base extracted by these solvents, if bulky, the greater part may be evaporated on the water-bath, and the remainder allowed to spontaneously evaporate. By this process a great many ptomaines or cadaveric alkaloids have been separated, studied and identified.

The following is a tabulated statement of these ptomaines, which have been arranged according to their behavior to solvents; and the action of some of the respective tests as compared with those of vegetable alkaloids.

FIRST CLASS.

This includes ptomaines which pass from acid solution over to ether.

GENERAL TESTS.

Tannic acid.
Iodo-iodide potass.
The action of the first two tests gives similar results to those obtained from natural vegetable alkaioids.
Chloride of gold.— No precipitate.

On evaporating four or five drops of aqueous solution, the addition of three drops of Hcl and one drop of H₂SO₄ gives, on warming, a beautiful violet color. Nitric acid colors it yellow.

Ptomaines of this class might be mistaken for digitaliu which is also taken up by ether from acid solu-

DIGITALIN.

Evaporate to dryness and treat with $\rm H_2SO_4.-A$ rose color turning mauve with vapor or bromine.

SECOND CLASS.

Ptomaines which pass from an alkaline solution over to ether. This group gives various color reactions and forms crystalline products. The physiological test produces short dilation of the pupils and diminishes the frequency of respiration. With the following test may mistake morphia.

Iodic scid.— Decomposes.
 Phospho-molybdic scid.—At first a violet changing to a blue color reaction.
 Plat. chloride.—A precipitate.

MORPHIA

Iodic acid.- Decomposes.

THIRD CLASS.

Ptomaines not soluble in ether but soluble in chloroform as obtained from alkaline solutions. All the bases of this group are strongly acid and possess a pungent, bitter taste. They decompose very readily on evaporation of chloroform, even at a low temperature.

TESTS.

Iodic acid.—Reduces all the bases of this class.
Iodo-lodide potass.—Produces crystaline products.
Sniphuric acid.—A red color.

Fræhdes reagent. - A red color.

FOURTH CLASS.

Ptomaines insoluble in ether and chloroform, and which readily pass from alkaline solutions over to amylic alcohol tests.1

Hydriodic acid. — Long needle crystals.
 Amylic alcohol. — A base which does not reduce iodic acid and gives no color with the usual tests, and which makes a mistake with plant bases impossible.

Morphine. — Can also be in this class.

The color tests and all known tests for it should be applied.

FIFTH CLASS.

Ptomaines which are not extracted by either ether, chloroform or amylic alcohol, but which are soluble in water and almost tasteless.

With sulphuric acid. — No color reaction.
 Chloride of gold. — Gives no precipitate.
 Chloride of mercuty. — Gives no precipitate.
 Hydriodic acid. — Gives no precipitate.

It is, of course, necessary that the solvents and all materials used in extracting, and the reagents, should be absolutely pure. In separating and isolating the ptomaines from the vegetable alkaloids a good microscope is indispensable, as the crystals formed by the latter are very marked. When one considers that in some cases not more than two or three drachms of fluid are available for chemical analysis to determine the presence of the different poisons, he will have some idea of the importance of the delicate nature of the work of the toxicologist.

Medical Progress.

RECENT PROGRESS IN OTOLOGY.

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THE HEARING OF NEW-BORN CHILDREN.

ACCORDING to Preyer, who has made some of the more recent researches upon the hearing of new-born children, it is possible, during the first two hours following birth, to make loud sounds, such as the clapping of the hands close to the ear, shouting and the like, without producing any evident reaction in the child; in other words, there exists in the newly born a physiological deafness which lasts until about the fourth

For the purpose of exact comparison with these results, Dr. Poli has made a series of investigations in twelve new-born children, one delivered at the seventh month and the others at full term. The examinations of the children were made during the first three days of life, and preferably during the first five hours. one case the test was made at the moment of the expulsion of the child. The result showed that the children born at full term were fully capable of perceiving during the first moments of life all such auditory excitation as would be produced by whistling, tapping and similar high-pitched sounds. The reaction obtained varied from a simple contraction of the eyelids to slight muscular movement extending over the whole body. High-pitched sounds were those first perceived. In the case of the child born before the full term sounds made under the most favorable conditions produced no reaction whatever.

The difference in the results in degree in the individ-¹ L'ouie des nouveau-nés, par C. Poll. Arch. ital. di otol., etc., 1893, fasc. 4.

ual cases depends probably upon the condition of the sound-transmitting apparatus the fact being that the gelatinous mass which fills the tympanic cavity does not change immediately after birth, but remains a greater or less length of time, and in the case above mentioned of the infant born before the full term it did not disappear until the twentieth day. If, therefore, the existence after birth of a period of physiological deafness is admitted, it is probably to be explained by an obstruction to the passage of sound waves through the middle ear, and not by an early deficiency in the sound-perceiving apparatus.

THE EXTRACTION OF FOREIGN BODIES FROM THE EX-TERNAL AUDITORY CANAL.

The subject of the extraction of foreign inanimate bodies from the external auditory canal is one which occasionally becomes of considerable individual importance; and the following contribution by Dr. Ziem 2 is of interest, both because of the novelty of his methods and because of his confirmation of observations made in this country on the extraction of foreign bodies by rotation of the auricle. A boy eight years of age had put a pea into the ear, and previous attempts at extraction by means of a hook had been unsuccessful. On examination there was found to be a considerable swelling of the skin of the canal engaging the foreign body in such a manner as to make its immediate removal by syringing impossible. Under these circumstances, resort was had to the procedure recommended by Voltolini, which consists in making, by means of the galvano-cautery an opening in the pea or bean for the purpose of decreasing its dimensions. Although the cauterization was very slightly made in Ziem's case it caused an amount of pain greater than that mentioned in any of Voltolini's observations, and the resultant heat in the caual was so strenuously objected to by the patient, although the cautery was confined entirely to the surface of the pea, the skin of the canal not being touched even, that it was necessary to suspend further attempts at extraction and the patient was ordered simply to use instillations of almord oil for the purpose of decreasing the swelling in the canal, and to report later. On the following day, the father of the patient, an intelligent man, reported that the foreign body had made a rotary movement in the caual, and the accuracy of this statement was evident when, upon examination under good illumination, it was found that the spot burned upon the pea showing as a black mark against the light surface, and made directly in the centre of the canal, had turned toward the posterior wall to such a degree that it would have been impossible to repeat cauterization of the pea at the same spot without burning the skin. The cautery was therefore applied at another point on the pea, and the instillations of almond oil were repeated. On the following morning the pea was found so near the orifice of the canal that it was easily removed by means of a hair-pin.

In reference to the mechanism of the rotation and spontaneous displacement of the pea as observed in this case, the following points should be considered:

(1) The cauterization caused a shrinking of the pea, which thus became in a measure disengaged from the swollen walls of the canal.

(2) The use of the oil caused a decrease in the Note sur corps étrangers du conduit auditif, par C. Ziem.
 Annales des Maiadies de l'Oreille, du Larynx, tome xx, No. 6.
 Die Anwendung der Galvanokaustik, 1892, p.-297. swelling of the canal walls and still further contributed to the ultimate liberation of the foreign body.

(3) The muscular tissue of the canal is principally developed in the tragus and antitragus, as shown by the anatomical investigations of Tataroff, who says that the movement of these small muscles is one of retraction of the canal, and this being confirmed by the observation that on voluntary muscular contraction there is a rotation of the tragus on the frontal axis of such a character as to contribute an upward movement to the anterior superior portion of the canal, it is evident that this movement served to turn and extrude the pea after the swelling of the walls of the canal had subsided.

LIVING LARVÆ IN THE HUMAN EAR.

A further contribution to the subject of living larvæ in the human ear is made by Dr. D'Aguanno in the report of two cases, both of which are here cited.

A boy, eleven years of age, had complained for four days previous to the examination of violent pain in the left ear accompanied by a bloody discharge. There was no history of injury which could account for these symptoms; the pain was almost continuous, desisting only at long intervals. The child was much agitated, and kept quiet only with effort. Under good illumination the bottom of the external auditory canal, the walls of which were covered with blood, presented to view two whitish bodies somewhat translucent, which by their color and their immobility suggested epidermal desquamation. Following a thorough syringing with warm water a second inspection showed the whitish body to be a moving larva, which was easily extracted by means of the forceps: the larva was fusiform in shape, about a centimetre and a half in length, and three millimetres in diameter, its head terminating in a black point. After still further syringing, a second larva was seen in motion at the bottom of the canal, and was also easily extracted. The membrana tympani was congested over its whole surface, as was also the inner end of the canal, which showed a number of small bleeding spots; there was neither cerumen nor pus in the canal. On examination, the larvæ were found to be those of the musca canaria sarcophaga.

The second case was that of a child, nine years of age, who had been complaining for about four days of considerable pain in the left ear, accompanied by a sanguineous discharge. On the day preceding his visit, the mother on looking at the ear had seen something white in the canal and had extracted it by means of a knitting needle, but the discharge of blood continuing and the pain increasing and being accompanied by fever, the child was brought for inspection. Examination showed at the bottom of the canal in the midst of the blood, which very nearly filled it, a whitish moving substance, which successfully resisted all attempts at its removal by means of syringing, and when an attempt was made at extraction by means of the forceps a quick movement on the part of the child disengaged the instrument and the larva disappeared into the niche formed by the inner end of the canal and the anterior inferior portion of the membrana tympani. Fumigations with tobacco which were immediately undertaken had no effect in dislodging the larva, and syringing through the Eustachian tube was impossible on account of the intolerance of the child.

⁴ Archiv. fur Anatomie, 1887.
 ⁵ Larves vivantes dans l'oreille. Annales des Maladies de l'Oreille, du Larynx, tome xx, No. 8.

The patient, therefore, was placed upon the side with the affected ear downward, and the larva being unmolested for half an hour came out into the canal, was easily extracted, and was found to be of the same form and dimensions as those previously removed. On the following day the child was quiet, the fever had disappeared, both the pain and the bloody discharge were decreasing, the inflammation of the external auditory canal had subsided, and there was visible only, upon the surface of the membrana tympani, such abrasions of the epidermis as might have been caused by the hooks of the larvæ.

DISTURBANCE OF HEARING DUE TO HYSTERIA.6

Disturbances of hearing which may be referred to as hysteria have always been considered as rare manifestations of this neurosis. This is, however, an apparent rarity only, if one may judge by the number of cases collected by Grandenigo for a work now in course of publication. Of the two cases reported by Cartaz, the first is the more interesting. A young girl sixteen years of age had neither spoken nor apparently heard for the two days previous to the professional visit. She was well developed and had begun to menstruate three years previously; but this function was at first irregular, and she was occasionally at the time of the periods subject to attacks of torpidity with a tendency to weep without cause. Two days previously, in the evening, following an animated discussion with a school friend, she received on the left cheek, as a sequel of the argument, a vigorous blow. Stunned apparently for an instant, she quickly collected herself, and without a word went home, where, upon arriving, she burst into tears. Her mother spoke to her without obtaining a response, and the patient made movements of the lips as if to speak, but without uttering a sound. She also appeared not to hear what was said to her, went to bed and slept soundly during the night. On the following morning the deafmutism was as complete as on the previous evening. The patient made signs, and wrote on paper the following words: "I am deaf; I cannot speak. M. (giving the name of her school friend) struck me." The day passed of her school friend) struck me." without any disturbance or evidence of any special nervous symptoms; the patient had very little appetite and desired to be let alone; her attempts at speech were ineffectual, there being no emission of sound with the movement of the lips; but her intelligence remained unimpaired, and she responded normally to communications made in writing. Careful tests showed that she was absolutely deaf; she could hear neither the watch, the voice, nor the tuning-fork. Conversation was carried on in writing; and the patient stated that she suffered no pain, that she could not hear what was said, that she could not speak, and that she had a great deal of lassitude. The examination showed a total hemianesthesia of the left side. There was no evidence of injury to the ear, either in the auricle or in the ex-The membranæ were of normal color ternal canal. and position. The left ear was as completely anesthetic as the skin of that side; the sensitiveness of the right ear was normal; there was very marked anesthesia of the pharynx and of the soft palate on both sides. The case was evidently a hysterical manifestation as the result of a shock and of the emotion which preceded and followed it. In answer to the written statement

⁶ Deux eas de surdite hysterique, par M. Cartas. Société Française d'Otologie, session de 1894.



that she could be relieved, she wrote, "I will do anything that may be required of me in order to recover." The patient was very intelligent and responded readily, always in writing, to the questions which were asked her and to the directions which were given her, also in writing. An electric current of slight intensity was applied to the pharynx, the other pole being applied to the neck, when the patient immediately said in a clear voice, "You are hurting me." She was instructed in writing that it was necessary to be patient. and was again assured that she could be relieved. Either as the result of suggestion, or of the irritation of the galvanic current, the patient again exclaimed, and declared that she could hear, as an evidence of which she responded readily in conversation. patient recovered rapidly and definitely. A hydrotherapeutic treatment was advised, and there was no recurrence of the hysterical attack.

DECREASE OF THE HEARING POWER IN OLD AGE.

The series of investigations which have been made by Richter upon the hearing powers of individuals of different ages, and which includes an extensive series of tests, is summed up so far as the decrease of the hearing power with age is concerned, as follows: There is found in old age a decrease in the perception throughout the whole scale of hearing in an equal degree, and which is shown in tests by means of the whispered voice, Politzer's accumeter and the watch, by a corresponding decrease of the hearing distance, in tests with the Galton's whistle by a sinking of the limit of perception, and in tests with tuning-forks of all tones by a shortening of the perception of time both by air and bone conduction. In attempting to determine the location of the changes in the ear which would tend to decrease the hearing in advancing years, attention would naturally first be directed to the interference to the passage of sound waves which might occur in the sound-transmitting apparatus; and while, as is well known many changes occur, not only in the membrana tympani but in the tympanic cavity, as an accompaniment of old age, that the mucous membrane undergoes various changes, that the muscles of accommodation lose something of their energy, that the ligaments become poorer in cell tissue and richer in connective tissue, and that the articulation of the ossicula becomes the seat of chalky deposits and of other structural changes; notwithstanding these facts, the physiological results of the hearing tests point, not to an interference with the passage of sound in the sound-transmitting apparatus, but to a deeper-seated cause for the presbycousis.

EFFECT OF FEVER UPON THE HEARING POWER.

An examination of the effect of fever upon the hearing power, which has been made by Schneider, under the direction of Valentin, shows that in twenty-six cases, including phthisis, abdominal typhus, acute rheumatism, pneumonia, tubercular coxitis and caries of the cervical vertebræ, there was during the onset of the fever a decided decrease in the hearing power. This decrease was, however, a variable one, and was equally observable in patients with normal ears and in those whose hearing was already somewhat decreased by localizable auditory disease. The decrease of the hearing and its variations in reference to the fever bearing the same ratio in both classes of cases, the con-

Richter: Vergleichende Horprufungen an Individuen verschiedener Alterklassen. Archiv für Ohrenheilkunde, Band 36, Heft 2.
 Schnieder: Ueber den Einfluss des Fiebers auf das Gehorvermögen. Inaug.-Diss., Bern, 1891.

clusion was that the impairment of the hearing in fevers in general is not alone the result of disturbances in the sound-transmitting apparatus of the ear.

THE USE OF MENTHOL IN OTITIS EXTERNA.

Cholewa,9 who has published a number of observations upon the use of menthol in otitis externa and otitis externa furunculosa makes a still further contribution confirmatory of his previous statements. He has now reduced the strength of his solution to fifteen per cent. and ten per cent. with results equal to those obtained with stronger applications, the pain in cases of furuncular inflammation being relieved and the swelling of the canal disappearing usually within twentyfour hours, and to guard against relapse the application of wicks saturated with a stronger solution of menthol has been continued usually for a week. The same application has also been found useful after the boils have opened, and also in cases of secondary inflammation of the canal accompanying acute suppurative inflammation of the middle ear. In cases of acute purulent inflammation of the middle ear, after performing paracentesis, the writer syringes the middle ear through the Eustachian tube with a one-per-cent. saline solution, and then inflates the ear by means of the catheter, through which is introduced a few drops of a ten-per-cent. oil of menthol. The external auditory canal is then carefully dried and a dry menthol glycerine wick introduced as far as the membrana tympani, and changed once in twenty-four hours. The duration of disease in cases treated in this way averaged about eight days, and the good result is referred to the action of the menthol, not only upon the staphylococcus pyogenes aureus, but also according to Rönick and Tröie upon the streptococcus pyogenes.

NECROSIS AND SEQUESTRUM OF THE LABYRINTH.

Lannois 10 reports a case of necrosis and sequestrum of the labyrinth in a young man, twenty-three years of age, who had had a suppurative discharge from the right ear for twenty years, the original cause being an inflammation of the middle ear following scarlet fever. The discharge from the ear ceased spontaneously, and the ear remained dry for five years, at the end of which time the discharge returned, accompanied by slight pain, at which time he consulted a physician not so much on account of the ear as because of some difficulty in breathing; an examination of the chest, however, and the history of the case gave no evidence of tuberculosis. Three months later he applied for advice on account of his ear, in which he had for nine days previously severe pain, extending also over the right side of the head, and a sufficient degree of vertigo to incline him to remain in bed. On the third day of the attack he had almost incessant vomiting accompanied by fever with a variable temperature.

The discharge was found to consist of a mixture of pus and blood, and the bottom of the canal could not be seen because of the numerous granulations projecting from the middle ear; the watch was not heard on forcible contact with the bone, and he was not able to differentiate the sound of the tuning-fork, but the Rinne experiment was positive. The hearing in the left ear was normal. On the following days the pains continued as did also the fever, accompanied by chills, and the slightest movement increased the nausea and vomiting; autipyrin in concentrated solution served to

Cholewa: Monatechr. für Ohrenheilkunde, 1892, Nos. 3, 4.
 M. Lannols: Neorose et sequestre du labyrinthe. Société Française d'Otologie, session de 1894.



diminish the pain; and, as there was absolutely no evidence of mastoid complication, the local treatment consisted in the removal of the polypoid granulations and their cauterization with chromic acid. At the end of the fifth day the patient was able to get up and to present himself in the clinic, but the improvement in the condition of the ear was slow because of the readiness with which the granulations recurred. The treatment consisted in the continuation of the installations of antipyrin, menthol, absolute alcohol and boric acid. Eight months after his first visit the patient was almost entirely relieved of the discharge from the ear, although the bottom of the tympanic cavity was slightly moist and was difficult of access because of the swelling of the canal. There was no trace either of membrana tympani or ossicles. Three weeks later the patient returned with a report of slight pain in the ear during the preceding week; after syringing, a small mass, apparently bony, was seen in the external auditory canal and carefully removed, it was found to consist of the osseous cochlea entire, including the columella and two and a half turns of the lamina spiralis terminating in the hamulus. One week later the patient returned for examination with the ear quite dry and a test of the hearing power showed that he heard both the watch and the Politzer acoumeter in contact with the bone in front of the ear and upon the mastoid. It was impossible for him to lateralize the tuning-fork placed upon the forehead or upon the right mastoid. Rinne's experiment was negative on that side.

The interesting points in the case are, the absence of tuberculosis, the speedy recovery after the extrusion of the sequestrum, the limitation of the sequestrum to the cochlea, and, therefore, the subsequent absence of such symptoms as Meniere's vertigo and facial paralysis, and finally the apparent persistence of a certain degree of hearing power, a paradoxical phenomenon which has been observed in several other cases and has excited interested discussion. "May not," says the author, "the possibility be admitted in this case of the retention of certain portions of nervous structure pertaining to the cochlea and capable of perceiving certain sounds?" It has been supposed in some of these cases that the patient really heard with the sound ear and mentally referred the hearing power to the other side; but the patient, in this case, who was exceedingly intelligent and who had been informed of the possibility of such an error, positively affirmed that he heard both the watch and the acoumeter in the ear from which the cochlea had been removed.

PACHYMENINGITIS RELIEVED BY TREPHINING.

At the same meeting Guye 11 reported an interesting case of pachymeningitis relieved by trephining. The patient was a young man, sixteen years of age, with an acute otitis media following influenza, whose treatment included paracentesis of the membrana tympani, removal of hypertrophied tonsils, opening of the mastoid, removal by curetting of pus and granulations from the cells, and who was finally discharged with normal hearing. Four weeks later the patient had slight fever and occipital pain, accompanied by tenderness both on pressure and percussion in a spot about five centimetres above and behind the ear, both the ear and the mastoid remaining normal; this condition of things lasted for two and a half mouths with little

¹¹ Guye: Ein Fall von Pachymeningitis externa ex otitide durch Trepanation geheilt.

or no change, at the end of which time the skull was trephined at the spot of greatest tenderness and only a somewhat hyperemic dura mater found; but from the day of the operation the abnormal symptoms entirely disappeared, and at the time of the report of the case the patient had been perfectly well for a year.

Guye concludes that after the relief of the mastoiditis, even with the middle ear perfectly free from suppurative process, it is perfectly possible that a pachymeningitis externa may develop, and that this may be arrested by timely operation, and compares this case with the results of operations on the mastoid process where no pus is found, but where the operation gives definite relief. Such cases as have been described by Schwartze, as neuralgia mastoidea, by Knapp as congestive mastoiditis, the author prefers to call mastoiditis sicca, and reports another case of this form of mastoid disease, in which after careful chiselling no pus was found, but the entire removal of the remainder of the mastoid two months later entirely relieved the painful symptoms, although in this second operation also, no pus was found; at the time of the report three years had elapsed without return of unfavorable symptoms.

At the third meeting of the German Otological Society, Kessel 18 read a paper on the subject of

ANTERIOR TENOTOMY OF THE MUSCULUS TENSOR TYMPANI AND MOBILIZATION AND EXTRACTION OF THE STAPES.

As a result of his investigations he presents the following conclusions: (1) Good results are to be expected from these operations only when the perceptive power of the ear remains unimpaired both for pitch and intensity. (2) By means of an anterior tenotomy in cases of intact nervous apparatus and movable stapes, there is no appreciable disturbance of accommodation and the hearing for the whispered voice was about twenty-five metres, the musculus stapedius regulating the tympano-labyrinthine resonance apparatus. (3) With excision of the membrana tympani, malleus and incus in cases where the tympanum was free from special pathological changes, the stapes movable and its muscle normal, the whispered voice was heard at a distance of ten metres on an average. (4) In the cases of extraction of the stapes, the whispered voice was heard at a distance of eight metres only under favorable conditions, and varied considerably with the changes in intra-labyrinthine pressure, it being necessary to provide an artificial substitute to reproduce mechanically a source of labyrinth pressure.

Miot,18 in a paper on the mobilization of the stapes, gives the conclusions at which he has arrived as the result of his recent observations, and which still further confirm the statements made in his original paper on this subject: (1) Mobilization of the stapes is often the only means for modifying certain pathological conditions which resist all other treatment. (2) To obtain the best results it is necessary to observe carefully both the indications which made the operation apparently justifiable and the rules appropriate to the method of operation. (3) Under proper aseptic conditions no complication need be feared, occasionally the patients complain of a temporary increase of the subjective noises. (4) The mobilizing treatment following the operation and good hygienic conditions are necessary to the best ultimate results.

 Kessel: Referat uber die vordere Tenotomie, Mobilisirung und Extraction des Steighbugels.
 M. Miot: Quelques remarques sur la mobilisation de l'etrier.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

JAMES G. MUMFORD, M.D., SECRETARY.

REGULAR meeting, Monday, May 7, 1894, Dr. H. W. WILLIAMS in the chair.

DR. WILLIAM B. HILLS read a paper on

CHRONIC ARSENICAL POISONING: ANALYSIS OF 260 SPECIMENS OF URINE.¹

DR. E. S. WOOD: I am very glad Dr. Hills has put upon record his very interesting cases. In reference to the diagnosis of chronic arsenical poisoning by the examination of the urine, it is to be borne in mind that the examination of the urine is exceedingly valuable in many cases of acute poisoning, that the urine shows the presence of large quantities of arsenic very quickly after the ingestion of a poisonous, or of a therapeutic dose not poisonous, of arsenic. That was well illustrated in a case of mine that Dr. Hills referred to where Professor Shattuck gave the patient small therapeutic doses; during the first month following the last dose of arsenic the urine contained quantities which were larger than one-tenth of a milligramme in the litre, and it has been my experience in all cases after the ingestion of Fowler's solution, or of arsenic in other forms as a drug or as a poison, that it required just about one month to bring the quantity of arsenic in the urine down to one-tenth of a milligramme per litre. This I have had an opportunity to observe in a good many instances after taking Fowler's solution, and in some cases after the ingestion of white arsenic in toxic doses, and in one or two instances after the ingestion of toxic doses of Paris-green. After the lapse of one month after the last dose elimination goes on very slowly, and was complete in the only case of a poisonous dose that I have had the opportunity to follow out, in ninety-three days after the ingestion of the dose. I would like to confirm the statement Dr. Hills made in regard to the necessity of being able to control the surroundings of the patient. You cannot study the elimination of arsenic properly unless the patient can be controlled; and in all three of the cases of mine that Dr. Hills referred to, the patient was in the Massachusetts Hospital, under conditions which were free from arsenic, as was shown by the arsenic disappearing completely from the urine of all three. Since then I have followed the urine in cases of chronic poisoning in two other cases in the hospital. In one the analyses were not sufficiently frequent to have the record of any value. The other case, however, is one which is valuable to put upon record with the other cases of the exact time required for the complete elimination of the arsenic. I think Dr. Shattuck has already referred to this case in a paper read in Philadelphia. It is a case where the source was presumably wall-paper, but there may have been other sources; at all events the wall-paper upon the sleeping-room of this patient contained 0.03 mgm. of arsenic to the square inch of paper, which would make thirty-nine milligrammes to the square yard. The chances are there were other sources besides the wall-The patient's urine contained, when he entered the hospital on January 31st, or rather a few

days later, about 0.03 mgm. to the litre; it continued to contain arsenic until April 24th, exactly twelve weeks from the date of his entrance. This would seem to show, that in cases of chronic poisoning the time required for the elimination of arsenic is not so very different from that required after the ingestion of large doses. In the case of acute poisoning referred to, ninety-three days, and in this chronic case eighty-four days, were required for the complete elimination of the arsenic.

In regard to the various sources of arsenic, it is almost impossible to trace them, as Dr. Hills has said. I had a very good illustration of this in a recent case, the investigation of which is not quite completed, but probably the source has been detected. The urine of two members of the family was examined, and found to contain in each case about 0.03 mgm. per litre; later, an examination of the urine of two children in the same family showed the same quantity of arsenic. All of the sources of arsenic supposed to be possible were removed, and four weeks later an examination of the urine of both of the patients first examined, showed an increase from 0.03 mgm. to 0.05 or 0.06 mgm. per litre. This I could not explain at the time; but learning that a good deal of complaint had been made of the odor of coal-gas coming from the furnace, I examined some of the dust from the hot-air chamber and found it to be very arsenical indeed. The entire heating apparatus was then changed, but sufficient time has not yet elapsed to say whether or not the arsenic has entirely disappeared. Since then I have examined the dust in the hot-air chamber of a furnace in a house occupied by a person in whose urine arsenic had been constantly present for more than a year, and found a large quantity of arsenic in the dust in the hot-air pipe. This was presumably the source, since no arsenic could be detected in the house, wallpaper, carpets, etc.

Recently I have had occasion to examine the urine of two individuals of a family, husband and wife, the husband's urine having been found to contain 0.1 mgm. to the litre; and in order to find out whether the source of arsenic was probably in the house or at his place of business, he being engaged in a business where more or less arsenical materials were handled, although these were not in the room which he occupied, but in another part of the establishment, I requested to be allowed to examine the wife's urine for arsenic, although there were no symptoms in her case. I found to my astonishment that her urine contained also 0.1 mgm. of arsenic to the litre, which is an illustration of what Dr. Hills has said, that of two persons subjected to the same influences, one may show symptoms and the other not; though in both of the above cases there was evidence of marked renal irrita-

In connection with the subject of renal irritation, without having collected the records of my analyses, I am very sure that my records would bear out Dr. Hills's statement in regard to a large number of patients whose urine contains arsenic, and having an irritation of the kidney. That I have already referred to it in another paper read before this Society and already published, arsenic being mentioned as one of the sources of renal irritation; but there are so many other causes of that condition that it is impossible to infer that where we find renal irritation we must necessarily find arsenic also. My observations also

¹ See page 453 of the Journal.

confirm Dr. Hills in reference to the frequency with which we find in these cases of chronic arsenical poisoning a very decided tendency to a diminished quantity, high specific gravity, and concentration of the urine. These conditions tend to increase the renal irritation produced by the arsenic. I have known a few cases where arsenic is contained in the urine in which the urine was dilute and contained only a normal proportion of solids.

Dr. Hills referred to the irritation of the kidneys continuing for a long time in one or two cases after the arsenic had disappeared. It occurred to me while he was speaking, that that might be placed in the same category, with cases of very prolonged convalescence from irritation of the kidneys due to other causes. For instance, recently I have had under observation a case which occurred in the practice of Dr. Rotch, where the renal irritation following scarlatina has taken a very long time in convalescing — much longer than we ordinarily see. The case has been going three or four months now, and there is still a remnant of the irritation of the kidneys left, shown by the presence of abnormal blood corpuscles and renal cells, and very rarely a cast with these elements adherent to the cast, in the urinary sediment.

DR. DAVENPORT: Considering the prevalence of arsenic, I think it is to be wondered at that any of us are free from it. We live so many of us in brick houses, all the bricks of which contain arsenic. All natural iron contains arsenic. Probably there is not one furnace in the city that does not emit arsenic. We know that coal almost always contains pyrites, and thus will generally contain some arsenic. Almost every chemical that is made from unpurified sulphuric acid contains arsenic. A teaspoonful of ordinary glycerine will often contain several tenths of a grain of arsenic. A square inch of ordinary silk coat-sleeve lining will generally blacken a whole tube. In preserving our sample of urine we must see to it that it is not allowed to become alkaline in a glass which itself contains arsenic. We examine our papers and carpets, but how many examine the carpet linings. In almost every sample of the ordinary brown paper carpet lining we usually find what is considered a daugerous quantity. In all the common black cambric furniture lining I have found an objectionable quantity. The sources of arsenic are almost innumerable.

Dr. Putnam: I have been very much interested in Dr. Hills's paper. The clinical history of arsenical poisoning has gone through several very interesting When we first were made acquainted, many years ago, with the observations published in this country and abroad of arsenical poisoning, I think examinations of the urine were very rare indeed, and at the same time arsenic was much more common than now in large quantities in cambrics and gauze and wallpapers. Then the urine analyses began. At first the discovery of arsenic in the urine was taken as an indication that the symptoms observed were due to arsenic. It was eventually found, however, that these small quantities of arsenic were present in such frequency that that test would not be considered a safe Then came the various attempts to get legislation on this subject, but it was hard to persuade legislators that this was needed, in view of the great difficulty of showing that wall papers and fabrics were of arsenical poisoning is not in a very satisfactory responsible even for the small quantities found in the state. urine. The recent observations with moulds, in Italy

and America, may remove this difficulty in some measure. The clinical diagnosis, it seems to me, is often very difficult to make, in the more chronic cases. The most striking clinical symptom is perhaps neuritis, but the diagnosis of arsenical neuritis is now difficult to accept without criticism, because so many different causes of neuritis in general have been discovered. It seems to me certain that arsenic may act as a contributive cause of a variety of conditions of sickness, even when present in small quantities, but in many cases its action is to be suspected rather than proved.

In the two cases I will relate the symptoms seemed at first to be very characteristic, and they are both cases which I believe on the whole to be cases of poisoning, and yet this doubt as to the diagnosis makes itself felt. One of them came to me with signs and symptoms of acute progressing paralysis of all four extremities. I hoped it was neuritis, but he had such extreme loss of power, especially about the shoulders, which is an unusual place to be affected early in neuritis, and such great muscular atrophy, that I was afraid the case was an instance of extremely rapid progressive muscular atrophy. After a time he began to improve. It was a severe form of neuritis with high degree of paralysis and atrophy. The urine was examined and arsenic found. On inquiry it was found that he had been taking arsenic for a few weeks in moderate amounts under medical advice. Wood examined the urine, and I think most of us felt that the real cause of the sickness had been discovered. Later, however, when he was nearly well, he took arsenic again, by the advice of an irregular practitioner, for the cure of asthma, but there was no recurrence of poisoning. Of course, it is not at all certain, and the experience of many of us will bear out the fact, that because a person is poisoned once he would be poisoned a second time by the same quantity. I have sometimes thought that in certain stages when the patient was fairly convalescing from arsenical poisoning and suffering mainly from the effects of neuritis, a reasonable quantity of arsenic might be a proper treatment. The fact was that the patient did not relapse, and in fact continued to improve as regards both his paralysis and his asthma. The question of other possible causes of his neuritis came up. I was entirely unable to find any. The symptoms came on in June, when the weather was pleasant. He had been out of doors, and was living in the country, free from apparent sources of contagion, and had not had any infectious disease.

The other case was that of a lady who had for a long time pains in the epigastrium for which no cause could be found. Dr. Cutler saw her in consultation, and could not discover any digestive disorder. These pains came on day after day in the afternoon. The hands were tender, and it became difficult to write. Arsenic was found in the urine at intervals for one or two years, and was referred to various papers which were removed. The symptoms finally entirely disappeared. That seemed like a first-rate case, and I believe it was. For some reason or other, however, she has again exhibited the same symptoms, and now the urine is free from arsenic; so that I think the question of the symptomatology of this very chronic form

In connection with the irritations of the kidney it

is interesting to bear in mind the cases of arsenical poisoning from therapeutic doses of arsenic. Quite a number are on record which seem to be quite satisfactory and I collected at one time quite a number of such cases. Some of them have been reported as occurring among children who have taken arsenic. One of my friends has seen two severe cases of neuritis occurring immediately after the taking of arsenic for chorea. Dr. Osler, who had been rather inclined to disbelieve in the poisonous action of arsenic given in therapeutic doses, even very large doses, has recently reported a case where it seems to him unquestionable that poisoning occurred.

Another point is this interesting question about the possibility of persons being poisoned from the gases set free by fungi. I presume Dr. Hills referred to that point and I therefore omit doing so. It would certainly seem to be a new phase of the possibilities of poisoning from wall-paper, and it is interesting to note that an advanced student of the Medical School, Mr. Jones, repeated those experiments last year and obtained similar results. He was able to eliminate arsenic in gaseous form from wall-paper with the aid of certain of these forms of mould and paste, and found that a mouse died instantly when exposed to it. It certainly seems as if the theory was plausible that some of these volatile compounds of arsenic were more poisonous than even the arsenical dust. course that is a point about which I am not qualified to speak with any positiveness.

DR: BOLLES: Dr. Hills and Dr. Wood have spoken of the subject from the standpoint of the consulting chemist, and Dr. Putnam has just spoken of it from the standpoint of the physiciau. I should like to speak of it from the standpoint of the patient. I have had the intimate acquintance and responsibility of a little fellow whose case has been associated with arsenic over five years, and have had in connection with the case the advice of these gentlemen who are most eminent in their respective lines. I do not propose to take the case clinically; whether his symptoms are due to arsenic or not would be a long history and a good deal of discussion. It is five years since arsenic was first discovered in his urine and associated with a series of symptoms from which he suffered, and during those five years his parents and physician have been continuous in their attempts to remove him from the influence of arsenic. Of course the primary steps were taken at once, the paper examined and what was offensive removed. His clothing has been examined in the piece and made to order during all that time, linings and trimmings as well as materials. The carpets of the house were examined, and whatever was arsenical was removed at once; draperies and carpetlinings in the same way. The ceilings of the house, after the lapse of a year or so, were found to be arsenical, and they were changed. The dust of the rooms was examined, the bedding was gone over. Not only that, but the clothing of the whole family has been under surveillance, that of the servants as well. His playthings and books from his infancy up have been carefully watched with reference to it, and large numbers of them rejected before they came into his possession. His kindergarten toys and all that sort of thing have been long ago attended to. He has moved three times from one house to another in the cholera morbus at the Ocean House. I saw one or hope of getting free from exposures to arsenic that two of those cases and there was a great amount of could not be discovered or removed. He has been depression following them.

five summers away from home for the same purpose, and of those five summers three have proved disastrous and associated with arsenic. During all that time there has been but a little portion in which it has not been found in his urine. At first there was considerable diminution from the removal of the papers, which contained themselves a comparatively small amount. There were a number of Paris-green boxes in the house, and various wrappings and unimportant things of that sort, that is from the point of view of value. They were early eliminated, and apparently a good deal of improvement followed; but the ceiling of the house contained a larger amount of arsenic than all these other things, and yet the removal of that did not appear to ameliorate his symptoms or the amount in his urine. Whenever the house was to be stirred up by cleaning, he was taken away, and he was not brought back till after it was done; and there was always an increase of arsenic in his urine from that cause alone. He once visited Dr. Wood's laboratory, and while I was speaking with Dr. Wood played about in it for a while. Whether from that cause or not, the next day or two he was taken ill, and an increased amount of arsenic was found in his urine. The quantity found has varied from less than one-hundredth to more than one-tenth of a milligramme. During his earlier years I think the average ran between one and two hundredths of a milligramme. This last winter, after these years of persistent care, the urine at one time presented one-tenth of a milligramme, almost the largest quantity he has ever shown. That even represents a larger amount per diem, because in his earlier years his urine was very much diminished, while of late it has been forced by flushing with water to the normal amount, so that the litre of water which is taken for examination now represents about a day's elimination, while it used to take three days to get as much. This all seems to show that the papers, etc., about the house which have been examined and rejected on account of arsenic, at least in his case, were a comparatively unimportant factor. There was no diminution of arsenic in his urine after that following the first removal of the paper borders and the Paris-green boxes of which there were quite a number about the chamber in which he spent his time. The removal of various beds from the house, curtains and furniture, stuffing, and the ceiling with its large amount of arsenic, did not appear to have any effect upon the amount in his urine, which varied from one-fiftieth to three one-hundredths. He went once to the Hoosac Tunnel, and was sick there. I do not know how much there was in his urine. The papers were found to be moderately arsenical. He went once to Milton, and was free from arsenic. He went to the Isle of Shoals two years ago. There were three analyses of the uriue by Dr. Hills at that time. One specimen contained a hundredth of a milligramme two weeks before he left home, one just before he left home containing a very minute trace; then he was taken ill at the Isle of Shoals, and an examination at that time represented four times as much as he had when he left home. That curiously happened at the same time with those cases of arsenical poisoning at Salisbury Beach, or within two days of it, and there were at the same time a number of attacks of what was supposed to be I think it has been a

question whether there might not have been some arsenical source at that hotel as well as at Salisbury Beach.

In his case there have been probably one hundred examinations of the urine during the last five years with these varying results. There have been at least one thousand examinations of accessories in connection with it aside from the materials in the house. which have extended to the most remote particulars, with a result, as a rule, which has been negative. I do not know whether Dr. Hills's experience and that of Dr. Wood have been the same in other cases as in this, but the ordinary woollen fabrics which have been bought for him have never shown any arsenic, neither have those bought for other members of the family; occasionally ginghams have shown it. Quite recently he has had apparently an increase of arsenic from a gingham or some sort of print dress which has been made in his presence.

Now, there has been in his case some source of arsenic ever present in varying degree of abundance for the last five years which has not been reached by this careful and very extensive examination, and it seems to me it must come either in food or in the atmosphere of the house, perhaps from coal or gas. I think we need very much to have a case examined, not once but frequently. I think not only the coal in general, but particular kinds of coal from different mines should be examined to find the different amounts in the different sorts of coal; and also it seems to me the air from our furnaces should be examined; that coal gas and the products of combustion should be also carefully examined. This boy had one outbreak with an increase of arsenic which apparently followed the use of some coal which was in the house that his family had moved into. The coal was a soft bituminous coal, producing a great deal of smoke; the chimneys could not carry the gas off fast enough, and once there was an explosion of gas in the chimney which filled the room with smoke. A few days after that there was an ill turn and an increased amount of arsenic in the urine. Whether there is arsenic in the cannel-coal which has been used in the house a great deal, or arsenic in the coal of the furnace, has not yet been determined. I think house-rubbish is another source from which arsenic may frequently be obtained, although in his case it has been pretty carefully eliminated. In the ordinary household there come on an average, one or two arsenical boxes or packages a week from dry-goods men, etc. If these are put into the furnace or kitchen-stove, or used for kindling, it seems to me there is a source of arsenical vapor which may be absorbed and give this small amount of arsenic. In his case it is not possible, because the family have thrown away those boxes. There are certain fruits and vegetables which in a somewhat indefinite way with him have appeared at times to give an increase of arsenic in the urine - fruits, string-beans, cabbage and cauliflower. The experiment was tried with him with potatoes, with negative result. The family was supplied for eight months with potatoes raised on a new field, thoroughly plowed and cultivated without the use of Paris-green. There was no special diminution of the arsenic in the case during that time, and I cannot say there was any increase if potatoes from other sources were used. But there have been sevcular messes of string-beans used. So much has this stained light wood made to imitate mahogany, or

been impressed upon the family that he has not been given string-beans for two years except those raised in his own garden. There are other vegetables which his mother and nurse have found occasionally upset him in this same way. He has also for several years had apparently ill turns in the month of June about the time that Paris-green is strewed about the gardens on potatoes and various other things. The arsenic increased in his urine while tenting one summer in an open field. The nearest point where there were potatoes was one hundred and fifty feet distant, and when the potatoes were to be treated he was taken away for two days and over a rain storm, and yet after that there was a slight increase of arsenic in his urine; and I understand that a neighbor living on the other side of the potato patch had an attack of severe arsenical poisoning during that time. This particular farmer was very reckless in the matter, and put eight pounds, as he said, of Paris-green, mixed with seventy pounds of plaster on a patch of potatoes measuring perhaps one acre. In that case everything was apparently eliminated but food. The paper bills-of-fare were examined, and some of them contained a trace of arsenic; but if he had eaten two or three of them every day he would not have had more than the amount he eliminated. Now the arsenic has appeared in large quantities after removing into a fresh house and one which has been overhauled from top to bottom in the most careful way in reference to this point. It has increased every time he has been away to a summer house or hotel except one. The point I wish to bring out is this, that our present method of hunting for this small amount of arsenic is not sufficient. Usually the consulting chemist gives one or two examinations of the patient, and then a few examinations of the house make up his whole connection with the case.

Here is a case where nearly one thousand examinations have been made, and yet the point is not settled; and whether these symptoms are due to arsenical poisoning or not, there is enough reason to fear so to make it important to know where this arsenic comes from and to get some method by which the person can be at least experimentally freed from it. It seems to me the only way in which this can be done is to establish an independent scientific examination into the sources of these small quantities of arsenic; that there should be some chemist paid or induced to spend a large amount of time, perhaps a year, in the examination of all the things that surround us as we live here in our civilized surroundings. He should examine foods, not once merely, but repeatedly. For instance, let him take string-beans, which I think will often be found to have arsenic thrown on them accidentally when planted with potatoes, and examine samples from perhaps twenty lots during the season. I think nineteen out of twenty will be free, but there may be one containing arsenic enough to produce a definite effect. Different kinds of coal should be examined, so that those who are susceptible may be able to make an intelligent choice in the kind they should use. Books have not been particularly looked into by any of these investigations, and yet some of the covers of his books Furniture comes under the general were rejected. head of furnishings, and that I think has been looked into. It ought not to be overlooked that a large eral times when it has seemed to follow certain parti- amount of furniture in the last ten years is highly

ebony, and that the stain contains a considerable amount of arsenic. The leather of furniture and oriental rugs has not been sufficiently examined. I mention these as instances showing how little the chemist who is applied to once or twice can really tell of the absolute surroundings of a patient supposed to be suffering from this disease, and to ask the opinion of the Society as to the feasibility of some such plan as this: that there should be appointed a committee - including a member from the State Board of Health, a member from the Medical School, a member from the School of Technology - who shall superintend for the space of a year or more an examination of this sort. This committee should be provided with sufficient money to carry on a continuous series of examinations, and those who are interested in the matter of arsenic poisoning, patients who believe themselves to be sufferers from it, should be asked in the interests of the general good to contribute a sum of money for this purpose. Fortunately many of the sufferers from arsenic are among the richer portion of the community, and I think there would be little difficulty in raising what is necessary for an investigation of that sort.

THE NEW YORK NEUROLOGICAL SOCIETY.

STATED meeting, Tuesday evening, June 5, 1894, Dr. Edward E. Fisher, President, in the chair. Dr. Frederick Peterson presented

A CASE OF TABES, WITH HOMONYMOUS HEMIANOPSIA.

The patient was a man aged fifty, married, a bricklayer, without hereditary taint. He had a chancre twenty-eight years ago. Four years ago he first began to notice that his vision was growing dim, although eighteen years ago he had a transient diplopia for three He has been under observation at the Vanderbilt Clinic for a year, during which time there has been little progress in the main features of the case. He has absent knee-jerks; the Romberg symptom; sharp, shooting pains in the legs, principally the right leg; dull pain in the back; impaired muscular sense; slowness of micturition; Argyll-Robertson pupils and some optic atrophy. He has never had crises; no trophic disturbances; no girdle sensation nor anesthesia. In April, 1893, he noticed for the first time his hemianopsia. He thought it came on suddenly, but there was no accompaniment in the way of headache, faintness, loss of consciousness, nor other disagreeable symptoms. The left visual field is limited to the upper nasal quadrant; the right, to the upper temporal quadrant. Dr. Peterson said that Gowers had described a case of locomotor ataxia with a double temporal hemianopsia; but in a cursory examination of the literature on the subject he has been unable to find another reference to a case of this kind.

DR. WILBUR B. MARPLE said that when he examined the patient's eyes in July, 1893, he found the condition described by Dr. Peterson, namely, the left field was limited to the upper nasal quadrant, and the right field to the upper temporal quadrant, excepting for form, which extended over the upper nasal side. Over this area the patient recognized motions of objects, but colors, including white, were limited to the temporal quadrant. At a second examination made on June 1, 1894, the same condition of affairs were found, but the field of the right eye was somewhat

more contracted, so as to be more exactly quadrantic. Dr. Marple said he recently saw a man who while coming up from a cellar, struck the top of his head violently against a projecting beam. He was unconscious for some time, and afterwards there was atrophy of the optic nerve, with lateral hemianopsia, color defects, etc. His ocular symptoms were probably due to atrophy of the nerve, which had taken place in this peculiar manner. This same explanation will perhaps apply in the case shown by Dr. Peterson.

DR. PETERSON said these cases are so rarely seen that it is difficult to suggest any explanation of the phenomena. At times we can observe certain resemblances between tabes and general paresis. In the latter affection we may have temporary aphasic defects, hemiplegia or paraplegia, which pass away; and so in tabes we may also have these transient conditions. They are spoken of sometimes as being thrombotic in character; possibly they may be the result of changes in the vessel walls.

DR. WILLIAM M. LESZYNSKY said he had never seen a case of tabes with symptoms exactly similar to those in Dr. Peterson's patient. The fact that both eyes were affected made it rather difficult to locate the lesion. He was inclined to ascribe the conditions to a peculiar form of atrophy of the optic nerves.

The PRESIDENT said that, as suggested by Dr. Peterson, the peculiar conditions in this case might be due to changes in the vessel walls, probably a syphilitic endarteritis. He called attention to the fact that the optic atrophy has been progressing very slowly.

Dr. PETERSON also presented

A CASE OF PARALYSIS AGITANS, WITH TREMOR.

The patient was a man aged sixty, a wheelwright. He first came under observation in May, 1894. He has the characteristic, mask-like rigidity of the face; the attitude of Parkinson's disease is marked — the stooping shoulders, bent back, crooked elbows and knees. The hands and fingers have the characteristic position, and there is no tremor anywhere in the extremities or head. His voice has the monotony and something of the festination of the speech of paralysis agitans. There is at times a sort of propulsion in his gait.

DR. LESZYNSKY said he had seen two cases similar to the one presented by Dr. Peterson. One of these he kept under observation for a long time, and in that instance the tremor developed late in the course of the disease. The speaker referred to the fact that recent investigations have shown that the pathological changes met with in paralysis agitans are identical with those found in senility.

DR. EDWARD B. ANGELL, of Rochester, called attention to the fact that typical cases of this disease are rarely met with.

Dr. A. D. ROCKWELL presented

A CASE OF BRADYCARDIA.

The patient was a young man who had been under Dr. Rockwell's observation for some months, and during that time his pulse was never found to be above forty-nine beats per minute. The patient is in fairly good health, although he suffers from some digestive trouble and is very nervous. A strong galvanic current applied directly to the neck, reduced the pulse to forty-three.

The President said that during the past year he

had a patient under his care whose pulse averaged about fifty; occasionally it rose as high as sixty. The man had a constant feeling of dread, and was somewhat neurasthenic.

DR. LESZYNSKY said that in one case of bradycardia coming under his observation, the pulse-rate was thirty-two per minute, and the patient suddenly went into collapse. He had seen a number of instances of slow pulse in patients who suffered from the grip; in these cases the slow pulse was accompanied by high temperature. During the past winter he saw a patient whose pulse was eighty-four, and temperature, in the mouth, 104.5°; the pulse never went above ninety. In a case of Basedow's disease recently under his care, the galvanic current (four or five milliampères) applied to the region of the cervical sympathetic, reduced the pulse from 120 to 100 per minute.

Dr. Angell said that in gouty individuals, or in those suffering from inhemia or neurasthenia, there may be a slow pulse-rate. A number of such instances had come under his observation.

The PRESIDENT said he had seldom been able to moderate the heart-beat by the application of the galvanic current to the neck, either in ordinary cases or in Basedow's disease.

Dr. ROCKWELL, in closing the discussion, said that while his patient presented no evidence of lithemia, he was certainly neurasthenic. He had never seen any good results follow such mild applications of electricity as those mentioned by Dr. Leszynsky. It was seldom that a patient was able to bear more than 35 or 40 milliampères, applied to the neck; this patient, however, could bear 75 milliampères, and it was only then that the pulse-rate was at all affected. In Basedow's disease he had frequently seen the pulse reduced very markedly by the application of the galvanic current; other cases again were not affected by it at all.

EXHIBITION OF MICROSCOPIC SECTIONS, SHOWING WEIGERT'S NEW NEUROGLIA STAIN.

These sections were prepared by PROF. C. WEIGERT, and were exhibited by Dr. WILLIAM J. MORTON.

Dr. A. D. ROCKWELL exhibited

THE IMPROVED HIGH-TENSION COIL.

The interesting feature of this electrical apparatus, which the speaker said he presented in a rather crude form about a year ago, is the fact that we have in a single coil all the various lengths and thicknesses of wire which are now found so essential in the electrical treatment of certain diseases, especially in gynecology and neurology. By means of this apparatus the current can be increased from absolute zero to the maximum required.

DR. LESZYNSKY said that the majority of faradic batteries were so made that we could not graduate the current from zero, and on that account it was too strong in certain instances, not only for the purpose of treatment, but also for diagnosis.

A VERY OLD MAN. — A Frenchman now living in Russia is said to have attained the age of one hundred and twenty-six years. He was born in Paris on April 17, 1768, and has a vivid recollection of the "Terror." He joined Napoleon's army in 1798. He fought in the battles of Austerlitz and Jena, in the campaigns of Egypt and Spain, and finally was one of the 400,000 men who followed Napoleon to Moscow. — Sanitarian.

Recent Titerature.

A Practical Manual of Mental Medicine. By Dr. E. RÉGIS, formerly Chief of Clivique of Mental Diseases, Faculty of Medicine, Paris, etc. Second edition, thoroughly revised and largely rewritten. Authorized translation by H. M. BANNISTER, A.M., M.D. Utica, N. Y.: Press of American Journal of Insanity. 1894.

This is the first modern standard French work on mental diseases and their treatment to be translated into English, in spite of the fact that France has been foremost in reforming the care of the insane and well in front in advancing the science of psychiatry. volume, crowned by the faculty of medicine of Paris, is also a worthy representative of the work of that school. Its author is justly distinguished as an observer, teacher and writer in this department, and he has given us as might be expected a model handbook, remarkable in point of arrangement and clearness. His views also are sound and advanced; and we know of but one recent work of its kind which approaches this in conciseness and fulness. Its reception by alienists will be all the more cordial from the unique fact that it is written by an alienist, translated by an alienist and, under the direction of an alienist (Dr. Blumer), printed and bound by the insane (of the Utica Asylum).

The list of the subjects touched upon or more fully treated according to their importance is surprising and unusual in a manual for instruction, and not a large one at that. It is well translated and simple in style, although we find the usual crop of new terms which is apparently indispensable to works on insanity, and the equally familiar index poorly arranged and wofully defective.

The work is well worth more critical analysis, so many are its good points as a practical text-book; but lack of space and the wish to bring a decidedly useful book promptly to the notice of instructors and students at this season, leads us to postpone for the present any further consideration of its merits.

Text Book of Nervous Diseases. By CHARLES L. DANA, A.M., M.D. Third edition, with 217 illustrations. Post octavo; pp. xvi, 549. New York: Wm. Wood & Co. 1894.

The demand for the third edition of this work within two years helps to confirm the favorable opinion which was expressed in these columns in regard to the Notwithstanding the numerous works first edition. which have since appeared, it remains the best brief manual of the subject. To the second edition was added a chapter on general and special neurological therapeutics in which hydrotherapy, electrotherapy, vibratory therapeutics, suspension, the rest cure, and various new drugs and new methods of treatment were discussed. Although much condensed, this chapter will be found of great value. The worth of the various new drugs and methods of treatment is given in a word; and, as a rule, sufficient directions are given for their use, although a little more space might have been given to a description of some of the douches, etc., with which the general practitioner is very seldom familiar.

In this third edition only a few verbal corrections have been made.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, NOVEMBER 8, 1894.

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GENERAL CONSIDERATIONS ON ALCOHOLIC CIRRHOSIS OF THE LIVER.

HANOT, who has contributed much to the elucidation of hypertrophic cirrhosis of the liver, has recently written a monograph on atrophic cirrhosis; and as the result of an exhaustive study based on very many clinical observations, he regards "arthritism" as a necessary predisposing factor in this disease. arthritism he understands "a constitutional state, characterized by a vitiation ordinarily congenital and hereditary of the nutrition of the connective tissues and of their derivatives, which become tissues of less resistance." He refers in illustration to the congenital debility of the cardio-vascular system in chlorotic girls, of the nervous system in the hysterical and degenerate, of the lungs in persons predisposed to tuberculosis. "From a functional and anatomo-pathological point of view," he says, "arthritism is characterized by the exaggerated vulnerability of the connective tissue with tendency to hyperplasia, to fibrous transformation and retraction."

Hanot insists that clinical cases without number confirm his view, the "stigmata" of arthritism being everywhere apparent in the cirrbotic. We will enumerate the principal "stigmata," remarking that the French make quite as much of that monster arthritism as we Americans do of its congener, neurasthenia: "pseudo-lipomata, acne, obesity, varicose veins, hemorrhoids, enlargements of the second phalanges, early baldness, dry cracklings in the joints, rheumatic pains in loins and limbs, asthma and atheroma."

Among the signs of cirrhosis in process of evolution, Hanot enumerates dyspeptic troubles, meteorism, constipation, urobilinuria, urobilinic tint of the integument, sometimes a brouze tint from pigmentary deposit, glycosuria after ingestion of carbohydrates, pruritus, epistaxis, gingival hemorrhages, hemorrhoids, localized edemas, attacks of diarrhea.

"As for the dyspeptic troubles, it is," says Hanot, "difficult to define the part which the hepatic disease has in their production: the stomach is likely to be modified directly by the alcoholism, or by the arthritism. Hepatic patients have a strong dislike for fats and for meat. Hyperchlorhydria is a frequent condition of the stomach in the dyspepsia of hypertrophic cirrhosis, and hypopepsia or apepsia with lactic reaction in atrophic cirrhosis."

The constipation is generally ascribed to absence of bile in the intestines, and the meteorism indicates the same lack, the bile being antagonistic to putrescence. Meteorism is an early symptom, coming before the ascites, in accordance with Portal's jeu d'esprit, "Les vents précèdent la pluie."

Hanot has described, under the name of "pigmentary acholia," an alteration of the bile which is secreted without the ordinary coloring pigments. This gives rise to the decoloration of the feces, and is observed in almost all the diseases of the liver. In most cases of cirrhosis, the spectroscope shows the presence of urobiline in the urine, and thereby indicates in a general way the suffering of the hepatic organ and the disorder of the biliary secretion. The bronzed tint of the skin is also due to a trouble in the formation of the biliary pigments, and is seen at its maximum in "bronzed diabetes" associated with hypertrophic cirrhosis. The alimentary glycosuria is an early and persistent symptom. The pruritus is a troublesome affection, may exist apart from any eruption, and is not peculiar to cirrhosis, being observed in other hepatic affections with or without jaundice. It is one of the earliest symptoms. Hanot does not believe that impregnation of the skin by the coloring matter of the bile is the cause; this is not yet well understood. In a certain number of cases there will be frequent attacks of diarrhea alternating with constipation, which are explained by the hypertension in the portal system, as the hemorrhages and localized edema attest the profound disturbances in the circulatory system elsewhere. Hanot thinks that the epistaxes, the gingival hemorrhages, the purpura "testify to the cell-alteration, and the perversion of its hematopoiëtic rôle."

In the pre-cirrhotic period and at an early stage of the stationary period, the liver is eularged, "owing to congestive processes which usher in the sclerosis and the final atrophy of the organ." Many cases of cirrhosis, however, according to Hanot, are atrophic from the onset. He believes also that there is a rare form (which he was the first to describe) which is alcoholic and hypertrophic throughout its entire course. Among the later symptoms are the ascites with increased development of the abdominal veins, a dry pleurisy at the base of the right lung, anorexia, a brick-red tint of the skin, emaciation and cachexia.

The complications belong to the group of infectious diseases. The liver in its state of physiological integrity is "an advance-guard of protection against infection"; when smitten in its vitality and its function, it leaves the way open to infections. Among these,

grave icterus is "the last act in the period of infection and atrophic degeneration."

Among the intercurrent infections which frequently carry off the patient, are erysipelas, pneumonia or broncho-pneumonia, infectious endocarditis, suppura tive peritonitis, suppurative cholecystitis, abscess of the liver, acute infectious nephritis and phlebitis. The patient sometimes dies of "a veritable cholera"abundant watery diarrhea, algidity, coma; Hanot refers these choleriform attacks to an infection due to the colon bacillus. Cirrhosis sometimes prepares the way for tuberculosis, the latter grafting itself on the cirrhosis.

When the patient escapes or resists any of these intercurrent affections, he is very likely to die of grave icterus, which is in fact the natural and final term of the disease. These grave kinds of jaundice are classified according to the microbe that causes them; the symptomatology is somewhat different according as the icterus is the product of this or that microbe. There are grave icteri with hyperpyrexia; there are others with hypothermia. The infection in icterus with sub-normal temperature is believed to be the coli communis; at least, this is in accordance with some very exact observations.

The liver is the great arrester and destroyer of poisons - microbic and others - according to the modern physiological school. Therefore, when its functions are invaded the organism easily falls a prey to septic agents; and hence, in Hanot's estimation, the grand therapeutic indication becomes plain, to diminish the causes of infection by intestinal antiseptics, and thus to oppose by this indirect way the progress of the disease. Here he is in accord with Bouchard and his school, who teach that more good is accomplished in this disease by intestinal antiseptics judiciously administered than by any other means.

As an effort to throw new light upon hepatic cirrhosis through that popular and universal illuminator, bacteriology, this attempt of our French confrère is worthy of attention. The part played by his "arthriticism," and the inevitable "stigmata" by which its presence may invariably be recognized, is rather vague and misty theorizing to the Anglo-Saxon mind. Observation continues to convince, however, that excessive alcohol injures the hepatic cells; that the less resistant the organism the earlier the effect; that when the normal hepatic secretions are interfered with, intestinal digestion is deranged, and the general system falls a prey to poisons which are otherwise unformed or excluded.

DEATH FROM HYDROPHOBIA, WITH UNUSUAL FEATURES.

Joseph Hinterscher, a young Illinois farmer, who came to the New York Pasteur Institute to be treated about ten days previously, died in the Institute on October 28th of hydrophobia. So violent were the symptoms of the disease when he was taken ill on 5 of Harvard, and the others of the smaller colleges.

Sunday, October 21st, while walking through Central Park on his way to the Institute, that he was taken in an ambulance to Bellevue Hospital. The physicians there diagnosticated the case as one of acute hysteria induced by constant dread of becoming a victim of hydrophobia. He recovered rapidly, and on the following Wednesday was discharged, when he returned to the Pasteur Institute to continue the treatment. The next day he showed symptoms of insanity, and on Friday was again seized with convulsions more violent than in the first attack. Early in March last the patient was bitten by a dog who also bit two colts on his farm. The wound was very slight, and he thought nothing of it until five weeks afterward, when both the colts died, apparently of rabies. He was then urged to come on to New York for treatment, but refused to do so until two weeks before his death, when he was taken with a convulsive seizure.

An uncommon feature of the disease in this case was the rapidity with which the patient recovered from the violent spasms, and his apparent good health between the attacks. It is evident that treatment was postponed too long, and no conclusions unfavorable to the Pasteurian inoculations can be legitimately drawn from such a case.

MEDICAL NOTES.

REAPPEARANCE OF THE CHOLERA. — The cholera, which for several weeks has been quiescent, has broken out with considerable virulence in Broussa in Asia Minor, and several fatal cases have occurred at Constantinople.

A SYSTEMATIC STUDY OF APPENDICITIS. — Drs. William Pepper and J. William White of the University of Pennsylvania have undertaken a systematic study of appendicitis; and the University Hospital has set aside a number of beds for their use, so that all cases of appendicitis admitted may be studied from a medical and surgical point of view throughout their

THE CHICAGO ACADEMY OF SCIENCES. — The new Academy of Sciences building in Lincoln Park, Chicago, which has cost \$104,000 was formally opened on October 31st.

THE NATIONAL ACADEMY OF SCIENCE. — The National Academy of Science held its sessions at the Sheffield Scientific School at New Haven, Conn., on October 30th, 31st and November 1st.

A FATAL FIRE IN A SWEDISH HOSPITAL FOR THE INSANE. — The hospital for insane patients at Joenkoping, in Sweden, was destroyed by fire on October 30th and fifteen of the inmates were burned to death.

JOHNS HOPKINS MEDICAL SCHOOL. — The second year of the undergraduate department in medicine opened on October 1st. There were 31 entries, making in the two years 50 students in all. Of these, 13 are graduates of Johns Hopkins University, 8 of Yale, CHICAGO GYNECOLOGICAL SOCIETY. — At the sixteenth annual meeting of the Chicago Gynecological Society, held October 19, 1894, the following officers were elected to serve during the ensuing year: Dr. Franklin H. Martin, President; Dr. A. J. Foster, First Vice-President; Dr. J. C. Hoag, Second Vice-President; Dr. H. P. Newman, Secretary; and Dr. T. J. Watkins, Editor. The retiring president, Dr. Fernand Henrotin, delivered an interesting annual address, after which the Society adjourned to the annual banquet. Dr. John B. Hamilton, J. B. Murphy, Health Commissioner Arthur Reynolds, Alex. H. Ferguson and others were guests of the Society.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the week ending at noon, November 7, 1894, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 135, scarlet fever 35, measles 32, typhoid fever 44.

MEDICAL INSPECTORS FOR BOSTON PUBLIC SCHOOLS. - The Board of Health of Boston has put into operation a long-considered system of medical inspection of the public schools for the purpose of checking the spread of contagious diseases. Fifty physicians have been appointed for the various school districts, with a salary of two hundred dollars a year. Each morning they are to visit the schools of their district and examine any child who is feeling ill or whose appearance is such as to excite suspicion. the child is ill or shows suspicious symptoms, the physician is to recommend the teacher to send the pupil home, with advice to see the family physician. The authority of dismissal rests at present with the teacher, the physician acting only as an adviser. A second duty consists in the supervision of cases of contagious disease in his district. Each morning the medical inspector will receive a list of the cases of contagious disease reported to the Board of Health in his district during the previous twenty-four hours. The inspector is then to go to the houses of these patients and see whether the sick persons are properly isolated, and whether suitable and sufficient means of disinfection are being used. The following are the physicians appointed and the districts to which they have been assigned:

Drs. W. H. Grainger, Chapman district; William H. Ensworth, Emerson; Edward F. O'Shea, Lyman and Adams; J. F. O'Brien, Bunker Hill; E. M. Holden, Prescott; A. S. Knight, Frothingham; W. J. McNally, Harvard; John Duff, Warren; E. M. Greene, Bowdoin and Phillips; W. S. Boardman, Eliot; George A. Craigin, Hancock; A. K. Stone, Wells; J. M. Thompson, Winthrop and Quincy; D. A. Collins, North End Parochial; William H. Prescott, Brimmer; J. B. Blake, Franklin; H. L. Smith, Prince, Horace Mann, Mechanic Arts; C. M. Whitney, Dwight and Everett; William E. Fay, Hyde and Sherwin; William B. Bancroft, Lawrence; G. P. Morris, John A. Andrew; J. R. Draper, Shurtleff; R. M. Coal, Bigelow; E. S. Boland, Hart; William H. Devine, Norcross; L. D. Packard, Gaston and Lincoln; Timothy J. Murphy, Hugh O'Brien; R. E. Darrah, Comins and Martin; John S. Brownrigg, Smith Street Parochial School; J. C. D. Pidgeon, Dudley and Dillaway; E. F. Dunbar, George Putnam; C. D. Fillebrown, Dearborn; H. D. Arnold, Lewis; A. H. Tompkins, Lowell; H. W. Broughton, Agassiz

and Bowditch; James P. Broidrick, West Roxbury parochials; H. S. Rowen, Bennett; H. E. Marion, Washington, Allston; Pitts E. Howes, Charles Sumner; F. C. Jillson, R. G. Shaw; E. T. Twitchell, Minot and Harris; J. S. Greene, Tileston and Stoughton; Robert M. Merrick, H. L. Pierce; J. T. Sherman, Edward Everett; Samuel Crowell, Mather; H. V. Reynolds, Gibson; W. F. Temple, High, Latin and Normal schools.

DEATH AT THE AGE OF ONE HUNDRED AND FOUR YEARS. — Mrs. William Dickey, of Stockton Springs, Me., died on November 3d, at the age of one hundred and four years.

A BEQUEST TO THE MASSACHUSETTS GENERAL HOSPITAL. — Among the bequests of the late Miss Sophia Snow, of Bath, Me., is one of five thousand dollars to the Massachusetts General Hospital.

THE LYMAN PRIZE OF THE BOSTON CITY HOSPITAL. — The Lyman Prize of one hundred and fifty dollars will be given next year to the writer of the best essay on any subject relating to medicine or surgery. The prize is open for competition to all graduates of the Boston City Hospital of not more than three years' standing. Essays must be typewritten, and sent, accompanied by a sealed envelope containing the writer's name, to the Secretary of the City Hospital Club before January 20th, 1895.

THE FREE HOSPITAL FOR WOMEN. — The annual meeting of the directors of the Free Hospital for Women was held November 1st. The number of patients admitted during the year has been 149; of these 112 were discharged cured or relieved; five not relieved; and six died. The longest stay of any one patient in the hospital was 129 days; the shortest stay one day; and the average stay 24.6 days. The whole number of patients treated in the out-patient department during the year was 6,073, and of these 680 were new cases. The largest gift the institution has received the past year has been through the generosity of Mrs. W. B. Potter, who has given the sum of \$5,000 for the endowment of a bed.

TYPHOID FEVER AT WESLEYAN UNIVERSITY.—An epidemic of typhoid fever has broken out among the students of Wesleyan University, and ten cases were reported on November 3d and 4th. One death has already occurred (a freshman), and one of the faculty is dangerously ill. The origin is thought to be the water from an old well which has been found to be contaminated.

BEQUESTS TO MEDICAL CHARITIES.— The will of the late Mr. H. C. Hutchins, of Boston, makes the following bequests to medical charities: to the Massachusetts General Hospital and the Boston Lying-in Hospital, each, two thousand dollars; to the House of the Good Samaritan, the Boston Dispensary, the Massachusetts Home for Intemperate Women, and the Washingtonian Home, one thousand dollars each.

THE AUTOPSY ON THE GORILLA. — The autopsy on Gumbo, the gorilla, who died last week, was of considerable interest. The cause of death was an extensive tuberculosis of all the viscera. A curious feature of the gorilla anatomy was found in a large

bag or pouch in the front of the chest extending across under the clavicles and opening into the larynx. Its purpose was evidently to furnish extra wind and pressure for roaring. The appendix vermiformis was about ten inches long.

THE MASSACHUSETTS CATTLE COMMISSION. — Dr. F. H. Osgood, of Boston, has been appointed a member of the Massachusetts Cattle Commission to fill the vacancy caused by the resignation of Mr. Stockbridge. During October 487 cases of suspected tuberculosis were reported, and 121 of the animals have already been killed.

NEW YORK.

THE NEW CHAMBERS-STREET HOSPITAL. — On October 30th a private reception was given by the Board of Governors of the Society of the New York Hospital, from one to six P. M., at the new House of Relief on Hudson Street. The House of Relief, more popularly known as the Chambers-Street Hospital, was opened on July 5, 1875, in the building No. 160 Chambers Street, an old police-station, the use of which was given to the Society by the city authorities. It served the purpose of a branch hospital fairly well for a number of years, but for some time past it has been entirely inadequate for the demands made upon its resources; consequently the Board of Governors determined to erect a larger and more completely equipped building.

During the twenty years of its existence the growth of the work of this institution has been remarkable, and the records show that last year there were 367 general-ward patients, 1,972 reception-ward patients, 22,555 dispensary patients, and 2,844 ambulance calls. From July 5, 1875, to October 1, 1894, there were 6,751 general-ward patients, 30,917 reception-ward patients, and 276,333 dispensary patients, making a total of 314,301 patients; while no less than 42,983 ambulance calls were received.

The new House of Relief has a frontage of 50 feet on Hudson Street, a side façade of 95 feet on Jay Street, and a rear one of 50 feet on Staples Street. The building is substantially constructed, has four stories and a high basement. The operating-room is of large dimensions and very thoroughly equipped in every way, and the quarters for the hospital staff and the wards for patients are commodious and cheerful. A special room has been provided for the treatment of patients suffering from sunstroke, which so often occurs in the lower part of the city; and there is a lifting device by which the patients can be quickly transferred from place to place while passing through the different stages of treatment, and speedily conveyed to the roof when exposure to the open air becomes nec-The heating of the building is supplied by steam, and electricity furnishes the motive power for running the elevators, pumps and heating and ventilating fans. In the cellar are two large rotary fans for distributing air throughout the building, and their arrangement is such that the atmosphere of any room can be changed to any desired temperature independ-

ent of all other rooms; and in the roof space are two other larger fans, which can draw all the air from every room at the same time, or from any single room desired without disturbing that of other rooms. The atmosphere of the operating-room, by means of these fans, can be completely changed every five minutes, and that of any or all other rooms every fifteen minutes.

Migcellanp.

RESOLUTIONS PASSED BY THE SUFFOLK DISTRICT MEDICAL SOCIETY COMMEMORATIVE OF DR. HOLMES.

"IF the English-speaking world has lost a poet, a wit and a charming writer, no less cause has the wider circle of Medical Science to deplore the death of an anatomist and a humanitarian.

"Oliver Wendell Holmes loved anatomy, and taught it with accuracy, conscientious punctuality and painstaking skill. Those of us who have listened to his instructions can never forget his flow of descriptive language, his apt comparisons, his ready wit, and his fervent imagination, which clothed the dry details of his subject with the finest imagery, and enlivened our tired and flagging attention with kindly humor and illustrative anecdote.

"As a physician, too sympathetic for cold diagnosis, he wisely left the art for the science of medicine, and pursued anatomical and microscopic investigations which enriched our knowledge. His essay on 'The Contagiousness of Puerperal Fever' was one of the earliest utterances and certainly the most forcible one on hygiene and on sepsis during the puerperal state.

"A not unkindly satire unveiled to the profession his estimate of those pseudo-sciences—as he termed them—of phrenology and homeopathy. But he was equally strenuous in condemning polypharmacy, and a meddlesome interference with the stately march of nature in disease.

"His cheerful and kindly soul doubly endeared to his associates all that he said, and will serve to keep alive the remembrance of his genial presence and his warm heart."

AN APPEAL TO THE BRITISH MEDICAL JOURNAL AND THE LANCET.

THE Medical News has come to the end of its long suffering, and makes the following appeal 2 to the pity and better nature of the editors of the two chief English medical journals for thicker paper:

"You know, gentlemen, that the paper upon which is printed the 'foreign edition' of your otherwise splendid journals, is simply inexpressibly vile. It is at once thicker, and yet more mushy and rotten than tissue-paper, and is, therefore, properly fit for no purpose whatsoever — absolutely none — of civilized or unregenerate man. We can only explain its use on the ground of a contempt of us, the reason for which dates back to Revolutionary times, or perhaps to Simian ages. You certainly would not, and could not, treat a resident of the British Islands thus. We beg

¹ Subsequently called, "Puerperal Fever as a Private Pestilence."

² October 27, 1894.

of you to remember that, however remote the relationship, we are at least your Teutonic brethren, and that it is your duty to help on the cause of Anglo-Saxon civilization. Please do not forget that even an American can sometimes grumble, and even revolt, after prolonged indignity and injustice. We appeal to your compassion and to your sense of justice: In the name of your contributors, who write to be read of all men, not only of Englishmen; in the name of your foreign subscribers, who have paid for knowledge, not soiled paper; in the name of your type-setters and printers, whose good work is spoiled by your bad paper; in the name of your self-interest, as there are untold thousands of Americans waiting to subscribe when they shall be able to read what you and your contributors have written; in the name of medicine, whose cause you represent, but traitorously, because you spoil good eyes and brains by the unnecessary labor you thrust upon us; in the name of art, as the illustrations in the foreign editions of your journals become subjects of mirth to all outlandish men; in the name of human ethics and good character, because you are sadly wrecking both, and tremendously increasing the work of the future writer of a cursory history of swearing; and lastly, in the name of pure commiseration of your brother editors who, willy-nilly. are compelled to look through your columns to glean from them a knowledge of medical thought and progress. Misericordia! Misericordia!"

The request is a fair and timely one after the issue of the British Medical Journal containing the obituary notice of Dr. Holmes. An otherwise good likeness of the poet-physician was made disgraceful and absurd by the text on the other side of the sheet being perfectly legible across the face and shirt-front of the

portrait.

THE FIRST RECORDED DEATH IN HYPNOSIS.

THE death of Ella Salamon, in Tuzer, Upper Hungary, at her home, on September 17, 1894, while in an hypnotic state, has attracted much attention abroad, owing to the fact that it is the first recorded instance of death of this kind. The Journal of the American Medical Association publishes 1 the following abridged statement from the pen of Dr. William von Vragassy, who was visiting at the home of Count Lászlo Forgách, an uncle of the unfortunate victim, and who was present during the hypnotic experiment, and witnessed her death and the subsequent autopsy:

"' Miss Salamon was hypnotized in the presence of her parents and several relatives and friends; the operator, Mr. Neukomm, with the permission of the family and a full understanding with Miss Salamon. wished to induce in her an hypnotic state to gain information concerning the illness of the operator's brother, about whose malady the attending physicians differed. As Miss Salamon passed into hypnosis she seemed to be fatigued. The operator explained that he would attempt a very interesting experiment. He stated that for some time his brother, in Werschetz, had been raising blood, and the physicians could not agree that it came from the lungs or the stomach. Calling upon Miss Salamon to exercise clairvoyance while hypnotized, she gave a wonderful description of the patient's lungs, with the topography, pathology, diagnosis and prognosis. The operator said to her:

¹ October 27, 1894.

"We are now in Werschetz; do you see my brother?" - "I do not see him," she replied. He then explained to her the location of the house in which his brother lived, and said, "My brother is in the third room." "Yes, yes!" said the subject, in tones of conviction, "We are there." "How is my brother?" he questioned. She replied, "He is very ill." In answer to more questions, the subject then went on to explain the details of the patient's malady. She spoke of the lungs of the distaut patient as though they were before her on a plate. She used technical language with the greatest exactness, though she had never had medical training. After this, the subject's face was very pale and she seemed exhausted. The operator asked her a final question: "What do you think of my brother's disease?" With difficulty she answered, "Be prepared for the worst." At that instant she fell from her chair with a hoarse cry; her tongue protruded from her mouth, and she became collapsed. Her head was lowered, clothing loosened, artificial respiration performed after Sylvester's method, and ether injections given; later she was wrapped in blankets, but she died almost in a few seconds in spite of all.

"The autopsy was conducted by an assistant in the Pathologic Institute in Buda-Pesth in the presence of Dr. Jozsás and myself. The brain exhibited a high degree of anemia and consecutive malnutrition, with indications of edema; otherwise there was no abnormality. I consider the causes of death, acute anemia of the brain, incident to the hypnotic state, with syn-

cope and heart failure.'

"Professor R. von Krafft-Ebing writes: 'According to reports, the case is so unheard-of that there must have been concurrence of quite extraordinary circumstances. In medical experience it is the first case of death in hypnosis. Inasmuch as there are thousands of hypnotic experiments performed daily by the laity without injury to health, one must regard this exception as inevitable.

"'There is doubt that Ella Salamon died in hypnosis, but that she died by hypnosis is questionable. In the absence of a history of her life and a detailed description of her mental and physical condition during the fatal hypnosis, the manner of death cannot be

determined with certainty.

"'It appears that Miss Salamon was about twentythree years old, very nervous, and that she had often been hypnotized. On this occasion she seemed weary. The hypnotizer, in accordance with an unscientific belief of the laity, induced in her an alleged capability of clairvoyance, which for a person so intelligent as Miss Salamon, was a new and very trying experiment, calculated to cause her great emotional excitement. Miss Salamon then exerted herself, according to report, to be agreeable and useful in the suggested capac-While in the hallucinatory state she believed that she saw a diseased lung, and she gave a long description of the pathologic condition, in an excited and agitated manner. The final question of the operator had an intense emotional effect on her, and caused her collapse.

"'The brief report of the autopsy leaves no doubt that she died of cerebral anemia. It can be certainly stated that she did not die of suffocation (there was no spasm of the tongue); nor from cerebral hemorrhage; and not from auto- or imparted-suggestion — causes which might prove fatal under certain circumstances. All the symptoms given point to the brain as the organ concerned in inducing death, but it is uncertain whether through serious apoplexy or so-called nervous

"'The question of the cause of death in this case probably permits this answer: The unskilful use of hypnotism by a layman and the unusually violent cerebral excitement stand as the causes of death; but it must also be considered that the victim was probably a morbidly constituted person, with a personality which reacted abnormally to stimulation, and whose death might have been hastened when awake by a violent psychic force.

"'This case teaches that the laity should not practice hypnotism; that one must not play with hypnosis. In Austria there is an enactment of October 26, 1845, which permits only authorized physicians the use of magnetism (hynotism), and makes its use by others punishable."

Correspondence.

THE FIRST ADMINISTRATION OF ETHER IN PARIS, AND OTHER REMINISCENCES.

DORCHESTER, October 30, 1894.

MR. EDITOR: Dr. Galloupe's "Reminiscences of the Harvard Medical School," brings very vividly to my mind the lectures which I attended in the old Mason-Street building; for I was graduated from the Medical School just three years before the doctor. I can see Dr. Ware lay his watch on the table, and Dr. Jacob Bigelow hold up to the view of the class a little bottle of the drug on which he was lecturing. No mention is made of the lecturer on obstetrics, Dr. Channing, who was certainly the most entertaining of all our teachers. I well recollect the effect remaining on my own mind after I had listened to his course of lectures, and seen him at the close of them, push and pull his well-worn rag-baby through a pelvis taken from a female skeleton. I was as much puzzled as was the old king when he saw the apple dumpling. He, good old man, wondered how the apple could ever have got in; while my wonder was how a baby could ever have got out.

Dr. Galloupe was present when the first trial of ether was made at the Massachusetts General Hospital. I was in Paris when the discovery of anesthesia was announced, and was present when the first attempt in that city was made to etherize a patient. It was made at the Hôtel Dieu by Roux, who was then surgeon in chief at that hospital. The case to be operated on was one of fistula in ano in a man. M. Roux prefaced his operation with this remark, which I can give almost verbatim, "Gentlemen, we will now try this new American invention, but I have no idea that it will succeed." And it did not (with Roux). The patient was given a few sniffs from the inhalerhalf enough to etherize him and of course he felt the knife. M. Roux, Frenchman like, shrugging his shoulders, said, "Just as I expected, gentlemen," and made no further attempt. The next day, with my friend and room-mate the late Dr. George H. Gay, who was also present at Roux's attempt, I attended at La Charité, to see Velpeau give "the new American invention a trial." The amphitheatre was full, most of the American students being present. One of them, Dr. Henry Williams (if I recollect rightly), knew that the trial was to be made and had taken pains to give the patient instructions beforehand as to how he should inhale. I do not recollect positively what was the case operated on, but I think that this was also a fistula in ano, but whatever the case was, the trial was a complete success, and shouts from the Frenchmen of "Vive l'Amérique" were loud and long.

There is a moral to be drawn from this little bit of history, namely, if you want to give a new idea a fair chance,

let experiments be conducted by some one who believes in it, or at least, who has not committed himself in advance as against it. It would be well if this principle could be applied to the management of the Foxborough Institution for Inebriates. The experiment has never had a fair chance. It was opposed in the beginning in the Legislature, and by members of the medical profession; and since it has been established its friends have been persistently opposed in their efforts to carry out their ideas, until it now seems as if the whole attempt would be a failure. The facts, as I understand them, are as follows: It has long been the opinion of a very respectable number of those who have studied the subject, including some in and some out of the medical profession, that inebriety is, in a large number of cases, a disease - sometimes inherited, sometimes acquired; that its subjects drink, not because they enjoy the habit, but because they seek relief from suffering and they have not the will-power while under control of the habit to adopt the means of cure; that those means are prolonged abstinence, together with moral and physical tonics; that under such treatment a fair proportion can be cured and many relieved. This is all that a hospital for the insane can claim to do. Let any one visit Foxborough and then say whether the trustees have been furnished the means to carry out this plan. Nay, whether all the trustees themselves comprehend practically the idea of the first advocates of a hospital for the relief of inebriates. Until these conditions shall be fulfilled the experiment cannot be called a failure. You asked me, Mr. Editor, for some reminiscences; but of what use is it to stir the soil in which the past lies buried, unless to prepare it for the seed which shall produce a better harvest in the future?

I enclose a letter I have received from Dr. H. W. Williams, in answer to one in which I asked him whether I was right as to the part he took. I find that he was then, as now, an earnest seeker for progress.

Boston, October 29, 1894.

MY DEAR DR. C. — In reply to your note. I can say that I distinctly remember the first operation performed under etherization by Velpeau at the Hôpital de la Charité, at Paris.

Our colony of young American medical men was duly excited over the news that in Boston operations were being performed without pain; and I that morning had inhaled ether in the presence of the staff of the Hôpital des Enfants Malades, as a demonstration of its harmlessness. These officials rested satisfied with sticking pins half an inch into my arm, and pinching me severely; without producing deep unconsciousness; and I soon recovered suf-

ficiently to proceed to La Charité.

Velpeau was said to have previously made an unsuccessful attempt to employ anesthetics, and to have expressed his disbelief in their efficacy. The subject to be operated on was a man of middle age; the operation, the removal of a tumor of the size of the fist from the hinder part of the thigh. After a cautious administration of the anesthetic, by inhalation, the patient appeared to be asleep; and we looked on, in breathless suspense, as Velpeau's scalpel made an incision along the tumor, which was then wholly dissected off from the surrounding parts. wholly dissected to show signs of vitality, and sat up in bed. "Are you ready for us to begin?" said Velpeau. "Yes," replied the man, in half-asleep fashion. "Did you know it was all done?" asked Velpeau. "No!" said the patient, at once wide awake with astonishment. "Did you feel nothing?" asked the surgeon. "No," said the man. "Did you feel an operation you told me you had once before undergone?" said Velpeau. "Yes," said the patient; "it hurt me terribly.

Velpeau shrugged his shoulders, and walked out of the operating amphitheatre; and from that day anesthesia held its sway in the great hospitals of Paris.

Always cordially yours,
ILENRY WILLARD WILLIAMS.

METEOROLOGICAL RECORD.

For the week ending October 27th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: -

	Baro-Thermom- meter eter.			Relative humidity.			Direction of wind.		Velocity of wind.				Inches.	
Date.	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	¥.00 A. M.	8.00 P. M.	×.00 A. M.	8.00 P. M.	Rainfall in in
S21 M22 T . 23 W24 T25 F26 S27	30.26 30.38 30.38 30.30 30.14 29.88 30.00	52 50 48 50 48 50 52	56 53 51 52 50 52 61	48 48 45 47 46 48 49	92 71 ×3 81 ×8 89	83 82	⊁6 76 84 ⊭⊁ 92	N.E. N.E. S.E. N.E. N.E.	E. E. N.E. E. N.E. N. E.	8 7 6 7 15 32 5	9 8 4 16 24 16 7	0. 0. 0. 0. 0. F .	O. C. O. R. R. C.	.33
	30 19	-	53	46		_	 86			' 	-	_		1.40

*O., cloudy; C., clear: F., fair: G., fog: H., hazy; S., smoky; R., rain: T., threat ning; N., anow. † Indicates trace of rainfall 66 Mean for week

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, OCTOBER 27, 1894.

	in die	athe	7.8	Percentage of deaths from						
Citles.	Estimated popu-	Reported deaths in each.	Deaths under five years.	Infectious diseases.	Consump- tion.	Diarrhosal diseases.	Typhoid fever.	Diphtheria and croup.		
New York	1,956,000	626	211	14.40	12.48	4.00	1.60	5.92		
Chicago	1,438,000		}	_		_	_	_		
Philadelphia .	1.139.457	380	124	15.86	11.44	2.60	1.01	11.44		
Brooklyn	1,0+3,0+0	353	141	17.92	10.64	4.76	1.56	6.44		
St. Louis	540,800	-	 -	_	-	-		_		
Boston	501,107	210	78	22.09	7.52	4.23	2,82	12,22		
Baltimore	500,000	- 1	_	_	_	_		_		
Washington .	2~5,000	98	24	15.45		3.09	6.18	5.15		
Cincinnati	325,000	109	28	11.72	11.96	4.60	5.52	4.60		
Cleveland	325,000	97	45	33.99	4.12	6.18	1.03	4.12		
Pittsburg	272,000	1 —	_	_	-		_	_		
Milwaukee	265,040		9		-	3.70	3.70	_		
Nashville	87,754	27 39	15	11.10 17.92	3.70	2.56	2.56	_		
Charleston	65,165	38	-	11.92	2.56	2.00	2.00	_		
Portland Worcester	100,410	24	9	24.96	16.64	12.48	4.16	_		
69 11 TO	92,233	41	27	43.92	4.88	39.04	2.44	2.44		
f a11	90,613	36	12	13.90		11.12		2.78		
Combaldes	79,607	38	13	26.30	15.78	15.78	2.63	5.26		
Lynn	65,123	13	_		10.10			0.20		
Springfield	50,284	7	2	_	14.28	_	_	_		
Lawrence	49,900		_	_		_	111111	-		
New Bedford .	47,741	21	5	_	19.04	_	_	_		
Holyoke	43,348	17	6	8.58	_	-	_	_		
Brockton	33,939	6	4	16.66	-	-	-			
Salem	33,155	7	0	14.28	_	_	_	14.28		
Haverhill	32,925	7	3		_	_	-	_		
Malden	30,209	11	2	9.09	18.18	9.09	_	_		
Chelses	29,506	12	7	8.33	8.33	_	_	8.33		
Fitchburg	29,3≀3	7	1		14.28	_	- =	-		
Newton	28,137	12	5	16.66	8.33	-	8.33	8.33		
Gloucester	27,293	1 -	_			- -				
Taunton	26,965	9	3	44.44	11.11	11.11	11.11	22.22		
Waltham	22,058	4	1	50.00	_	_	_	50.00		
Quincy	19,642	5	3	20.00	_	20.00	_	_		
Pittsfield	18,502 16,585	1		20.00		20.00	_	_		
Everett	16,331		=	_	_	_	_	_		
Northampton .	14,073	3	1	_	_	_		_		
Newburyport . Amesbury	10,920	3	i	33.33	=	=	-	_		
Amesoury	10,020		•	20.00						

Deaths reported 2,345: under five years of age 812; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 419, consumption 265, acute lung diseases 254, diphtheria and croup 167, diarrheal diseases 121, typhoid fever 53, scarlet fever 32, whooping-cough 20, malarial fever 10, cerebro-spinal meningitis

whooping-cough 20, malarial fever 10, cerebro-spinal meningitis 9, measles 5, small-pox 1.

From scarlet fever Cleveland 19, New York 3, Philadelphia and Boston 2 each, Nashville, Worcester, Cambridge, Lynn, Somerville and Amesbury 1 each. From whooping-cough Brooklyn 6, New York 4, Boston 3, Pittsburgh 2, Philadelphia, Cincinnati, Cleveland, Charleston and Brockton 1 each. From malarial fever Charleston 4, New York 3, Brooklyn 2, Cleveland 1. From cerebro-spinal meningitis New York 3, Cleveland, Worcester, Lynn, Somerville, Holyoke and Marlborough 1 each. From measles New York 5. From small-pox Washington 1.

cough 38, small-pox (Birmingham 4) 4.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT. U. S. ARMY, FROM OCTOBER 27, 1894, TO NOVEMBER 3, 1894.

So much of the Special Order as directs CAPTAIN OGDEN RAFFERTY, assistant surgeon, to report to the commanding officer, Presidio of San Francisco, Cal., for duty, is revoked.

Leave of absence for six months on surgeon's certificate of disability, is granted MAJOR CLARENCE EWEN, surgeon.

So much of the order as assigns Major William H. Gardner, surgeon, to Fort Custer, Montana, is revoked.

So much of the order directing CAPTAIN ALFRED E. BRADLEY, assistant surgeon, to report for duty at Fort Keogh, Montana, is amended as to direct him, upon the abandonment of Fort Sully, South Dakota, to report for duty at Fort Custer, Montana

Leave of absence for four months, to take effect upon the final abandonment of Fort Ontario, New York, is granted MAJOR JOHN V. LAUDERDALE, surgeon, U. S. A.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NO-VEMBER 8, 1894.

A. W. DUNBAR, assistant surgeon, ordered to Naval Laboratory and Department of Instruction.

ARMEN FARENHOLT, assistant surgeon, detached from Naval Laboratory and Department of Instruction and ordered to U. S. Receiving-ship "Vermont."

L. W. STONE, assistant surgeon, detached from U. S. Receiving-ship "Vermont" and placed on waiting orders.

J. S. Hope, assistant surgeon, detached from Naval Hospital, Mare Island, Cal., and ordered home.

DWIGHT DICKINSON, surgeon, detached from the U. S. S. "Miantonomah" and ordered to the U. S. S. "Richmond."

SOCIETY NOTICE.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. - A regular meeting of the Society will be held on Monday, November 12, 1894, at the Medical Library, 19 Boylston Place, at eight o'clock, P. M.
Drs. H. C. Ernst and J. H. McCollom: "The Importance of a

Bacteriological Investigation in Cases of Diphtheria."

JOHN T. BOWEN, M.D., Secretary.

HARVARD MEDICAL SCHOOL.

EVENING LECTURES.

The next lecture will be given on Thursday evening, November 15th, at 8 o'clock, by Prof. D. W. Cheever. Subject, "Medical Ethics." Physicians are cordially invited.

RECENT DEATHS.

Barion Crowell Watson, M.D., M.M S.S., died in Scitnate, Mass., October 30, 1894, aged seventy years.

WILLIAM W. REESE, M.D., died in Brooklyn, October 20th. aged eighty-two years. He was at one time President of the Kings County Medical Society.

HENRY S. B. SMITH, M.D., M.M.S.S., died at Middleboro, Mass., October 30th, aged fifty-five years. He graduated from Bowdoin College in 1861 and after serving in the Union Army during the Rebellion, graduated from the Berkshire Medical College.

WILLIAM GOODELL, M.D., died in Philadelphia, October 27th, aged sixty-five years. He was born in Malta, his father, the Rev. William Goodell, D.D., being on his way to Turkey. He graduated from Williams College in 1852 and from the Jefferson Medical College in Philadelphia in 1854. He practised medicine in Constantinople from 1854 to 1861, when he returned to this country and began practice in Westchester. Being appointed physician-in-charge of the Preston Retreat he moved to Philadelphia in 1865, where he subsequently represented confising his delphis in 1865, where he subsequently remained, confining his practice to obstetrics and gynecology. He was appointed lecturer on obstetrics and diseases of women in the University of Pennsylvania in 1870 and four years later was made clinical professor of the diseases of women and children. Upon his resignation from this chair about a year ago he was made professor emeritus.

Original Articles.

CHRONIC ARSENICAL POISONING.

An Analysis of 260 Examinations of Urine.1

BY WILLIAM B. HILLS, M.D.,

Associate Professor of Chemistry, Harvard Medical School.

(Concluded from No. 19, p. 455.)

ACTION ON THE KIDNEYS.

Among the symptoms which have been mentioned as likely to be present in cases of arsenical poisoning of domestic origin, one of the most important is albuminuria with the sediment of an active hyperemia of the kidneys. I regret that I neglected to utilize many of my early cases for the study of this question. I have, however, a complete record of the chemical and microscopical examination of the urine in seventy cases in which varying amounts of arsenic were present. In twenty-three there was no renal complication. These twenty-three cases comprise six, in which the amount of arsenic was relatively large (0.045 to 0.12 mgm. per litre); twelve in which the amount was relatively small (less than 0.02 mgm. per litre); three containing intermediate quantities; and two in which the record of amount is indefinite.

Nineteen of these twenty-three cases did not come under my observation a second time. In four I made a single analysis, later. In one of these the urine was found to be free from arsenic after the lapse of twenty-two days. In two, the second analysis made several weeks later showed a substantial diminution in the amount of arsenic; from 0.05 and 0.06 mgm., respectively, to less than 0.01 mgm. In the fourth case, the second analysis was made after an interval of nine and one-half months. The urine yielded, at the first examination, 0.03 mgm., at the second, 0.045 mgm. of arsenic per litre, but was otherwise normal on both occasions.

In forty-seven cases the urine contained the elements of renal hyperemia. In eleven of these there were other conditions, apparent from the examination of the urine, or suggested by the history, to which the hyperemia may have been secondary. In thirty-six, no other cause than arsenic was suggested. In twenty-three of the latter series, the quantity of arsenic was relatively large; over 0.03 mgm., and usually over 0.05 mgm. per litre. In six, my record is indefinite, although the presence of a "large trace" is noted in two of these.

Great caution should be observed in drawing conclusions from cases in which but a single analysis was made. It is a very suggestive fact, however, that of thirty-two cases in which the urine contained more than 0.03 mgm. of arsenic per litre, in twenty-three, or 75 per cent., there were evidences of a renal hyperemia.

Among the thirty-six cases in which the urine presented evidences of a hyperemia at the date of the first analysis, there are several in which I had an opportunity of making frequent examinations. In a majority of such cases the disappearance of the arsenic, or its diminution below a certain limit, has been followed by a return of the urine to its normal condition. These cases are as follows:—

CASE I is one of the cases to which reference has

1 Read before the Boston Society for Medical Observation, May
7, 1894.

already been made. A nurse, forty years of age, was found to have a severe active hyperemia of the kidneys. As some of the symptoms suggested arsenical poisoning, the urine was later examined for arsenic, and found to contain a "trace" (quantity not noted). The supposed source was an arsenical red paper in the room occupied by the nurse and a child. The urine was found to be free from arsenic, and otherwise normal, twenty-three days after removal from this room. The child, under the same exposure, escaped renal trouble, although the urine contained arsenic. An additional interesting fact is to be noted, that the child was attacked later with scarlet fever from which it recovered without renal complication.

CASE II. I am not familiar with the full history of this case. It is one in which strenuous efforts have been made to protect the patient (a child) from exposure to arsenic. It is almost certain that there are no arsenical materials of the ordinary kinds in the patient's surroundings. The attending physician informs me that the urine is never quite free from arsenic. Usually the quantity is quite small, but occasionally it rises to nearly or quite 0.1 mgm. per litre. There is usually no evidence of renal disturbance. When, however, the quantity of arsenic is relatively large, there is, as a rule, a trace of albumin, and in the sediment the elements of renal hyperemia. I have made six analyses of the urine, and the results obtained confirm these statements. The urine has usually contained 0.003 to 0.03 mgm. of arsenic per litre, and at such times has been normal. On one occasion the urine yielded, approximately, 0.07 mgm., and presented the characteristics of renal hyperemia.

CASE III. June 12, 1891, the urine contained a "large trace" of arsenic, which was attributed to a highly arsenical chamber paper, which was at once removed. Renal hyperemia present. August 31st, arsenic absent; still a renal hyperemia. September 14, 1891, and March 9, 1892, the urine was free from

arsenic, and normal in other respects.

CASE IV. April 19, 1892, the urine yielded 0.1 mgm. of arsenic per litre. Renal hyperemia present. Many of the wall-papers in the patient's house were found to be arsenical, and were at once removed. October 13th, 0.01 mgm. of arsenic; urine normal. May 6, 1893, 0.035 mgm. of arsenic; urine normal. June 16, 1893, 0.01 mgm. of arsenic; urine normal. October 13, 1893, the urine contained 0.05 mgm. of arsenic per litre, and again showed the evidences of renal hyperemia. This analysis was made a short time after the patient's removal to a new house. As before arsenical papers were found and removed. November 7, 1893, 0.01 mgm. of arsenic per litre; urine normal. November 28th, 0.03 mgm.; urine normal. December 26th, 0.034 mgm.; urine normal. This is one of the cases in which the urine is never quite free from arsenic, the source of which has not been discovered.

Case V. May 31, 1892, the urine contained 0.035 mgm. of arsenic per litre; renal hyperemia present. May 31, 1893, the urine was free from arsenic, and otherwise normal. The case is imperfect owing to the long interval between the two analyses.

CASE VI. October 22, 1892, the urine contained 0.05 mgm. of arsenic per litre. Renal hyperemia present. The arsenic was attributed to certain arsenical papers which were subsequently removed. December 19, 1892, 0.055 mgm. of arsenic; renal hyper-

emia present. February 6, 1893, 0.015 mgm.: urine normal. April 10, 1893, 0.03 mgm.; urine normal. May 29, 1893, the date of the last analysis made in this case, 0.01 mgm. of arsenic; urine normal.

CASE VII. April 19, 1893, the urine contained 0.3 mgm. of arsenic per litre. Severe, active hyperemia present. May 10th, 0.025 mgm.; still a hyperemia. June 1st, 0.02 mgm.; urine normal. June 29th, arsenic absent; urine normal.

CASE VIII. In this case I have analyzed the urine at intervals for a period of two years. The quantity of arsenic has varied between 0.05 and 0.1 mgm. per litre. Since the second analysis, the quantity has been invariably about 0.05 mgm. The source is unknown. All the specimens examined have contained a trace of albumin, and in the sediment a few hyaline and finely granular casts, an excess of renal cells and a few abnormal blood corpuscles, both free and upon the casts, with occasional minute oil drops within the renal cells and upon the casts. The quantity of urine is substantially normal, the tendency perhaps being towards diminution, color high, specific 1, 1893, 21 in all: tertian 10, quotidian 9, irregular gravity 1.023 to 1.025.

CASE IX. Patient a young lady, age about eighteen. March 17th, urine pale; specific gravity, 1.012; slight trace of albumin; sediment of an active hyperemia. March 21st, the urine contained 0.06 mgm. of arsenic per litre. Color normal, specific gravity 1.017, albumin and sediment as before. April 17th, arsenic 0.015 mgm. per litre; urine as before, but the quantity of albumin was noticeably less. This case is still under observation.

CASE X. Patient a girl, twelve years of age. November 23, 1893, arsenic 0.03 mgm. per litre; renal hyperemia present. December 29, 1893, arsenic less than 0.005 mgm.; urine unchanged. January 13, 1894, arsenic 0.015 mgm.; urine as before. March 17, 1894, arsenic 0.02 mgm.; urine normal.

The number of cases which I have presented is probably too small to justify any positive conclusions relative to the action of arsenic on the kidneys. I desire to place them on record, however, as a contribution to the literature of the subject, and with the hope that further investigation will be stimulated.

So far as my own observations go, it appears: (1) That, when the system has absorbed such an amount of arsenic that the quantity eliminated with the urine daily is relatively large (0.03 to 0.05 mgm. or more per litre), there appear sooner or later evidences of renal hyperemia. (2) That the kidneys are not apparently susceptible, as a rule, to arsenic, when the latter is present in the urine in quantities below 0.02 We have, apparently, mgm. per litre, or thereabouts. a proof of this in the fact, that, in cases in which there is a renal hyperemia associated with a relatively large quantity of arsenic in the urine, the kidneys return to their normal condition while yet the urine contains a minute trace of arsenic. This fact was noticeable in nearly all my cases. A similar case is reported by Dr. F. Gordon Morrill.²⁶

The effects of very minute doses of arsenic upon the quantity of urine and amount of solids eliminated daily have not, to my knowledge, been studied. If small doses act in a manner similar to large ones, causing a reduction in the force and frequency of the heart's action, we should expect to find the quantity of urine diminished. I have observed considerable vari-

25 Boston Medical and Surgical Journal, exxii, p. 398.

ations in the physical characteristics of the urines which have been submitted to me in this class of cases. In the great majority of cases of well-established chronic poisoning, however, the tendency has been in the direction of diminished quantity and corresponding concentration.

THE TEMPERATURE AS A GUIDE IN THE ADMINISTRATION OF QUININE IN MALARIA.

BY FRANCIS H. WILLIAMS, M.D.

MALARIA has recently been so prevalent in and around Boston that I desire again to call attention to the treatment of this disease by the intermittent administration of quinine with the temperature as a guide. What I have to present confirms my experience in a series of 18 cases treated at the Boston City Hospital in the summer of 1892.1 The cases considered in this paper include those that came into my service at the hospital between June 1 and October type 2.

In all these cases the diagnosis was established by finding the plasmodia in the blood; sometimes more than one examination was required to detect them. As a rule, fresh specimens of blood only were examined, but in some cases the dried blood was heated and stained. All suspected cases were examined likewise a number of cases of typhoid fever, but no case of well marked typhoid fever with plasmodia was found. Before the patients were discharged from the hospital the blood was again examined for plasmodia, and hemoglobin determinations were made both after entrance and before discharge. Four-hour tempersture charts were kept during most of the time that the patients were in the hospital.

The patients came chiefly from Boston or its neighborhood; but there was one each from Pennsylvania, New York, Virginia and South Carolina, and two from Central America (these two happened to be the only ones in which the cresentic forms of the plasmodia were found). The pigmented forms were those usually found, and in a few cases they were associated with hyaline or cresentic forms or both; in two cases hyaline forms occurred alone, and in one case roseate

Two of these 21 cases were sent to the hospital with a diagnosis of typhoid fever, and one with that of spinal meningitis. The latter was of special interest. When C. E. entered the hospital he gave a history of illness for two weeks, with pain in the head, and was in a dazed, stupid condition, repeating questions over and over before answering them. He had no chill at any time while in the hospital, and gave no history of any chill. There was nothing in the morning or evening temperature chart during nine days to suggest malaria; but a four-hour chart showed a rise in temperature to nearly 100° every other day during four days. The spleen was somewhat enlarged and the patient anemic. The blood was examined, and the ordinary pigmented forms of the plasmodia were found, and also the cresentic forms. The case proved to be an irregular type of malaria. As we learned later, the patient had just arrived from Central America, and his illness began when three days out of port. Under the administration of quinine and iron the hemo-

¹ Boston Medical and Surgical Journal, March 9, 1893.

globin increased from 50 per cent. to 70 per cent. in eleven days.

Following the rule devised by Dock, fifteen or twenty grains of quinine in solution were given in the cases under consideration during the decline of the temperature, and repeated on the seventh, fifteenth and twenty-second days without reference to the temperature. If a rise in temperature occurred on the first or second day after the first dose was given, a second dose of ten to fifteen grains was administered when the temperature was falling. In significant of these 21 cases a rise occurred on the second day, and in these the second dose was given in the manner described. These six cases were quotidians; in none of the tertians was there a rise of temperature after the first dose.

Anemia was usually marked; generally from 50 per cent. to 70 per cent. of hemoglobin was found in the blood, but in two cases it was as high as 90 per cent. It is well to give iron in these cases; my patients had five grains of citrate of iron three times a day.

In contrast to this case is that of J. G., who was sent to the hospital with a diagnosis of malaria. He gave a history of chills at a certain time daily. After his entrance to the hospital his temperature rose daily to 103° or 104°. No plasmodia were found in the blood, and quinine had no marked effect on the temperature. Malaria was excluded. This proved to be a case of pulmonary tuberculosis.

The essential thing in treating malaria is, of course, to give quinine, and to give it in solution or powdered in capsules; but the cases, 39 in number, which I have treated by Dock's method during the years 1892 and 1893 at the hospital, as well as those treated in private practice, have with one exception (quinine had been given to this patient by another method before I saw him) yielded more promptly with far less quinine than the cases in which the quinine was given in divided doses during the day for several successive days, or when it was given with reference to the chill. I have seen cases in which more than thirty grains of quinine were given per day for some days by the physician in charge before the chills were checked, and a number of cases in which the quinine had been given to the amount of sixteen grains a day for several days before the patient was relieved; similar cases were invariably relieved promptly when the quinine was given in the way here advocated.

Further, under the use of this method, there was a smaller percentage of cases in which the chills occurred again some time after treatment had ceased; there was less cinchonism, usually none at all. There is less chance of any deleterious effect upon the ears, less quinine is needed; and the patients are not obliged to remain so long in the hospital. Many cases treated by this method require to be in the hospital two or three days only; they might then be sent for blood examinations and for the doses that should be given on the seventh, fifteenth and twenty-second days, to the out-patient department. It would be well to have the quinine administered there as the patients have not always the money necessary to buy quinine, nor is it always put up in the right way. Malaria may, of course, return if the patients go back to a malarial district; in such cases weekly doses of fifteen grains of quinine are probably a better preventive than smaller and daily doses.

In using Dock's method of treating malaria, namely, the intermittent administration of quinine with the temperature as a guide, more care is required to administer the first dose at the proper time than by the ordinary methods; but, as already indicated, I have succeeded much better and with the use of much less quinine with this method than with any other. The best results are not obtained if quinine has first been given to the patient in the ordinary way when suffering from an attack, before this method is employed. It is a requisite to the best success of this method to begin with its use.

THE BACILLUS COLI COMMUNIS.

BY EUGENE A. DARLING, A.M., M.D., CAMBRIDGE, MASS., Assistant in Bacteriology, Harvard Medical School.

THE bacillus coli communis, or, as the French bacteriologists more frequently call it, the bacterium coli commune, was first described and named in 1885, by Escherich, in his work on the bacteria occurring in the intestines of infants.1 He regarded the micro-organism as a pure saprophyte with a feeble pathogenic power. This opinion was accepted without question, and for several years little attention was paid to the bacillus by bacteriologists. A few observations were made as to its occurrence in various pathological conditions, but no systematic study of the biological, chemical and pathogenic properties was undertaken until 1889, when a great deal of interest was aroused by the assertion of Rodet and Roux, of Lyons, that the bacillus of typhoid, as described by Eberth and Gaffky, was merely a variety of the bacillus coli communis.² The practical importance of this question in pathology and hygiene was seen immediately, and a most thorough study of both organisms was begun simultaneously by many bacteriologists in various parts of the world, and, though still far from complete, the investigation has already shown that the theory of Rodet and Roux was a mistaken one, but that in other ways the bacillus coli communis plays an important part in human pathology. Although ordinarily a harmless inhabitant of the intestinal canal, it is probably the cause of many disturbances in that canal and in adjacent regions, particularly in the peritoneum. It has to do, also, with certain fermentative processes which take place in the intestine; and the toxines which it produces are probably responsible for many clinical phenomena which have hitherto been unexplained. Hygienically it is of very great importance, since its presence in water is direct proof of fecal contamination. When found in milk it is evidence of uncleanliness in the dairy.

As there is no satisfactory account of the recent work on this bacillus, a summary of the observations made during the past four years, chiefly by French, Italian and German bacteriologists, may not be without value.

SYNONYMS.

The term "bacillus coli communis" is applied by most bacteriologists to a group of micro-organisms of which the form described by Escherich may be taken as the type. Other observers have described forms which are so like that of Escherich that they may be

² Dock also states that instead of one large dose three or four fivegrain doses may be given at intervals of two hours during the decline of the temperature.

considered as identical, or at least very closely related. These forms are briefly:

- (a) The bacillus of Emmerich, found in the dejections of cholera patients at Naples.
 - (b) The comma-bacillus of Buchner.

(c) The bacillus of Brieger.

- (d) The bacillus pyogenes fœtidus of Passet.
- (e) The bacterium pyogene urinarium of Clado and Albarran.
 - (f) The bacterium enteritidis of Gartner.
- (g) The bacterium of dysentery of Chantemesse and Widal.
- (h) The bacterium endocardiditis described by Gilbert, Lion and Weichselbaum.

OCCURRENCE.

The bacillus coli communis is one of the most widely distributed of bacteria. It is found normally throughout the entire length of the digestive tract in man and other mammals, appearing in the infant in the first dejection following the ingestion of milk. Under normal conditions it probably exists in the intestines as a saprophyte, though it may have some digestive function as yet unknown. It is found outside of the intestine in other parts of the body in many pathological conditions, which will be described later. Outside of the body it occurs abundantly in water contaminated by sewage, in the dust of streets, in the air of poorly ventilated rooms, everywhere, in brief, where there is any fecal contamination. Abba has found it frequently in milk.

MORPHOLOGY.

Shape, Size and Arrangement.— The bacillus coli communis is a short rod with rounded extremities, varying in length from 2 to 3 μ , and in breadth from 0.6 μ to 1.2 μ. Sometimes the prevailing shape is oval or elliptical. The bacillus is usually single; but occasionally pairs, more rarely filaments, are observed. In old cultures on potato the prevailing form is a long rod with small spots in the ends which stain less readily than the rest of the organism and which some observers have regarded as spores.

Motility.— The Escherich type of the bacillus coli communis is characterized by peculiar slow movements - "träge Eigenbewegung," as he puts it. In a hanging drop preparation the whole field seems to be in a constant tremor. The individual bacilli, however, move but slightly, with a slow, tremulous From time to time, a single organism oscillation. may be seen making its way across the field with remarkable activity, elbowing its_companions out of the way most unceremoniously. Besides this slightly motile variety there are others possessing greater motility. Some forms have been described which cannot be distinguished by their movements from the typhoid bacillus; that is, they dart rapidly across the field with a whirling or gyrating movement.

The maximum activity is shown in cultures on agar at 37° C., from eighteen to twenty-four hours old. The motility of this organism seems to be a fixed characteristic. Remy and Sugg found that cultivation in media containing carbolic acid (one per cent.), bichromate of potash or antipyrine might diminish the activity temporarily, but when recultivated on agar the motility always returned.

of cilia or other organs of locomotion there is a diver-thick sediment forms in the water of condensation,

gence of opinion. Many have been unable to detect any cilia whatever, while others, notably Moore of Washington, have found from six to ten cilia, very similar in form and arrangement to those of the ty-The prevailing opinion, however, phoid bacillus. seems to be that the common, slightly motile variety possesses from one to three very delicate, wavy cilia, springing either from the ends or sides of the organism. They are very difficult to stain and on most cover-glasses there are many individuals which seem to have no cilia. My own attempts to stain the cilia have not been very successful; but they have, in the main, corroborated this view.

CULTURE.

On Gelatine (plates). - Colonies developing in the depths of the gelatine are spherical at first, but after several weeks they often take on an appearance like a sphere surrounded by a band — like Saturn with his rings — a shape which some writers have rather inaccurately compared to a whetstone. These deep colonies vary in color from a pale yellowish-brown to a decided brown. They are opaque and either homogeneous or slightly granular. Their margins are clearly defined and regular.

Those colonies developing on the surface vary considerably in appearance; but they may be roughly divided into three groups, as follows:

Type A. Characterized by an opaque dot in the centre, very similar to a deep colony, surrounded by The colony is circular with a a translucent zone. sharply defined, regular margin. In the outer, translucent zone are one or more faint concentric circles, seen most clearly by transmitted light. The colony is brown by transmitted light, but against a dark background by reflected light it appears bluish-gray.

These resemble Type A in general Type B. structure, but are much larger and have irregular, scalloped outlines. The concentric striations are more numerous than in Type A and are parallel to the margin, so that by transmitted light a colony of this type has a remarkable resemblance in shape and markings to an oyster-shell.

Type C. The colonies of this group are stellate in shape, and are often very beautiful. They are sometimes nearly transparent and made out with difficulty except by reflected light. The concentric striations are present, but are not so well marked, and there are sometimes very faint striations radiating from the centre to the margin. The colonies of this type, more rarely those of types A and B often have a glistening, ground-glass appearance.

Tube Cultures .- Growth takes place on the surface of the gelatine and throughout the length of the punct-The surface growth is white or pale-brown, slightly elevated, with somewhat irregular edges and occasionally with faint concentric striations. growth along the needle track is opaque and granular. In old cultures feathery or hair-like projections grow out into the gelatine horizontally. In the depths of the gelatine one or more small gas-bubbles may appear.

On Agar Agar (plates).— Colonies develop as grayish-white circular spots without characteristic appear-

On Inclined Agar. — Growth is very rapid at 37° C., beginning as grayish-white dots, which coalesce Organs of Locomotion.— In regard to the presence and spread over the entire surface of the medium. A

but no pellicle forms on its surface. A few bubbles of gas may usually be seen in the depths of the agar or along the sides of the tube. After a few days the cultures give off a very offensive, fecal odor.

In Bouillon. — Medium becomes cloudy and opaque,

and reaction is faintly acid.

On Blood Serum. Growth is usually slight, but is not characteristic.

On Potato. — The most common appearance is that of a thick, moist, brownish-yellow elevated growth. In other cases it forms a thin, nearly colorless, flat, linear growth which can hardly be detected with the naked eye. Between these extremes all gradations are observed. These differences are dependent largely upon the peculiarities of the potatoes used — their age, dryness, acidity or alkalinity. To obviate these elements of uncertainty Petermann analyzed a number of potatoes, and devised a fluid which contains all the essential components of potato in certain definite proportions. It is composed as follows:

Water .									1,000 parts
Glucose									1.10 parts
Asparagine									5.00 parts
Citric acid									.75 parts
Phosphate of	of p	otase	ium	. neu	tral				5.00 parts
Magnesium					•				2.50 parts
Potassium s	alp	hate							2.50 parts
Sodium chle					-	-			1.25 parts
Sodium car			to fe	eble	alka	linit	٧.	•	

To make artificial potato, take:

	-		•					
Petermann's fluid Rice powder Potato starch Calcined magnesia	:	:	:	:	:	:	:	70 c. c. 11.5 gms. 9.5 gms. 2.0 gms.
		-	-		•	-	-	

Mix the powders thoroughly in a mortar, and add the fluid little by little to avoid lumps. Then turn into crystallizing boxes about 5 mm. deep and cook in steam for about half an hour. Then empty the boxes, cut the medium into strips and keep in testtubes like ordinary potato. On this artificial potato Remy and Sugg tested a great many specimens of bacillus coli communis and found that all gave a vellowish-brown growth. It is therefore a convenient method of differentiation from the bacillus of typhoid,

which gives a colorless growth.

In Milk .- Most varieties coagulate milk completely in from twenty-four to forty-eight hours at 37° C. A few varieties take longer, but these are usually of a more sluggish type in other respects as well. The bacillus attacks the lactose or milk-sugar, decomposes it into lactic acid and other substances to be described later. The acid then precipitates the caseine in a solid lump, with bubbles of gas entangled. The serum of the milk becomes strongly acid. The action on milk is another very easy method of differentiation between the bacillus coli communis and the bacillus of Eberth and Gaffky, since the latter does not coagulate milk even after being kept for months at a temperature of 37° C.

Effect of Temperature on Growth.— The bacillus grows rather slowly at ordinary room temperatures, but at the temperature of the body it grows very rapidly. The vitality of cultures kept at 45° C, rapidly diminishes, and a short exposure to a temperature of 60° C is sufficient to kill them.

Spore Formation.— This has not been definitely observed, although some bacteriologists believe that the clear spots seen in the ends of the bacillus when however, have not been seen. The slight resistance of sodium or ammonium, citrate or lactate of calcium

to high temperature which this bacillus possesses, is evidence against its having a resting stage.

Need of Oxygen. — The bacillus coli communis grows abundantly in the presence of oxygen, but is also facultatively anaërobic. It grows freely in solutions of sugar and other reducible organic substances in the absence of air, that is, it is able to break up those substances in order to set free the oxygen which it requires for its sustenance.

Action on Gelatine. - Non-liquefying.

STAINING METHODS.

The micro-organism stains rather faintly in dilute solutions of the ordinary aniline dyes. Ziehl's carbolfuchsine and Löffler's methylene-blue give very clear results. It does not stain by Gram's method.

CHEMICAL ACTIONS.

(a) Indol Reaction.— The presence of a body giving the reaction of indol in cultures of the bacillus coli communis and its absence in cultures of the bacillus of typhoid was first brought into prominence by Kitasato in 1889. Since then most bacteriologists have accepted this test as one of the means of differentiation between the two organisms. A few observers have disputed this point. Rodet and Roux found the indol reaction very feeble in cultures of the bacillus coli communis and their opinion was sustained by Malvoz and Vallet. Chantemesse and Vallet found a faint reaction like that of indol on applying the test to old cultures of the bacillus of typhoid. Dunbar 10 in his exhaustive table of the difference between the two organisms says that the reaction is negative with both. To settle this point Remy and Sugg 11 inaugurated an elaborate series of experiments and were able to show that the different results were caused in this as in other respects by the fact that the various experimenters used different specimens or varieties of the bacillus coli communis. Remy and Sugg employed Salkowski's and Neucki's tests for indol, and a culture medium composed of water, 100 c. c., peptone siccum (Witte's), 3 gms., sodium chloride, 1 gm. To perform Salkowski's test, take 10 c.c. of a twenty-four-hour culture in this medium at 37° C., and add 1 c. c. of a solution of nitrite of potassium $(\frac{1}{5000})$. Then add slowly 1. c. c. of 25 per cent. sulphuric acid (C. P.). Neucki's test is performed by acidifying the culture with a few drops of acetic acid and shaking with 2-3 c. c. of alcohol and ether, equal parts. Decant the ether and evaporate it on porcelain. Then add a drop of solution of nitrite of potassium (5000) and a drop or two of sulphuric acid.

By either of these methods most varieties of bacillus coli communis give a pronounced red color after standing a short time. The variety called bacillus pyogenes fœtidus gives the deepest color. Other varieties give paler colors and a few give no color at all. Remy and Sugg found no trace of color in any of the specimens of the bacillus of typhoid which they tested in this way. The test is therefore of considerable value when positive but is not conclusive when negative.

(b) Fermentative Action and Gas Production.-One of the most important characteristics of the bacillus coli communis is its action on the sugars - glucose, lactose, maltose and saccharose - and on certain grown on potato are in reality spores. Isolated spores, other organic compounds such as glycerine, formiate and tartrate of ammonium. All of these substances are rapidly decomposed, setting free certain gases in greater or less amount, the media at the same time becoming acid. This reaction is of great diagnostic importance, since it has been found that the bacillus of typhoid, although it decomposes some of these substances, never sets gases free. Van Ermengem and Van Laer 12 consider the bacillus coli communis to be a saprophytic or putrefactive organism, while the bacillus of typhoid is purely parasitic; that is, the former not only gets nutriment from these organic substances, but also carries the reduction still further, to the point of producing CO,, H, methane, indol, phenol and the other products of putrefactive decomposition; while the latter is only able to use the sugars as food, without causing putrefaction. The bacillus pyogenes fœtidus seems to hold a middle ground between the bacillus coli communis and the bacillus of typhoid, since it gives rise to indol and some of the volatile products of putrefaction, but does not produce gas.

Methods of Testing Gas Production.— The simplest method consists in the employment of agar containing glycerine (five per cent.), or glucose (two per cent.), or lactose (two per cent.). A small amount of this medium is liquified in a test-tube, inoculated, rotated a few times and then allowed to harden. The bacteria are thus scattered throughout the medium. If gas production occurs, the agar becomes permeated with small bubbles which gradually make their way to the

surface and burst.

A more elaborate method is that suggested by Theobald Smith,18 consisting in the employment of small fermentation tubes, such as are used in urine analysis. The tubes are made of glass, bent in the shape of a U, one arm being longer than the other. The long arm is closed at the top and the short one is open. The latter has a bulbous expansion near the lower part. The long arm and part of the bulb are filled with nutrient bouillon or peptone solution containing two per cent. of glucose or lactose, and, after all the air held in suspension is driven out by repeated boiling, the fluid in the bulb is inoculated and the tube placed at 37°C. If gas is produced it accumulates in the long arm, driving the fluid into the bulb. The rate of production and the amount produced can be approximately measured by marking the level of the fluid on the glass at regular intervals. This method is at the same time a very good one for determining the ansërobic power of a micro-organism, since purely aërobic bacteria will develop only in the open arm. The chief objections to using these tubes are their fragility, their comparative expensiveness and the difficulty of cleaning them, owing to the narrowness of the bend.

The amount of gas formed, as measured by Smith's method, varies considerably with different varieties of bacillus coli communis and with the different sugars. Most varieties in solutions which are nearly neutral give about 45 per cent. of the tube length of gas. Others give less, some only a small bubble. The same organism may give more gas with glucose than with lactose or vice versa. It seems probable that the fermentation is checked as soon as the medium reaches a certain degree of acidity, and that the amount of gas produced depends in some degree upon the original alkalinity of the fluid.

According to most investigators the bacillus coli communis does not decompose all the different kinds

of sugar with the same readiness. All the forms except the bacillus pyogenes fœtidus seem to form gas with glucose, lactose and maltose. On ordinary cane sugar or saccharose the typical bacillus coli communis does not produce gas. Some of the more motile forms, however, produce gas with saccharose, but the action is always a slower one and the total amount of gas produced is always smaller than in glucose and lactose solutions.

Products of Fermentation.—Baginsky 14, Scruel 14 and Ide 16 have analyzed the products of the fermentation set up by bacillus coli communis in the glucose solutions. They agree in regard to the substances which they find present, but differ considerably in their explanations of their formation. The products are hydrogen, carbon dioxide and methane — forming together the gas evolved, - lactic, acetic and formic acids and traces of propionic and butyric acids; also a volatile body giving the reaction of iodoform. Of the gases hydrogen forms about 75 per cent. and CO. about 25 per cent., methane forming only a trace. Baginsky supposed that the various acids are formed by successive oxidation, lactic acid being the primary product and giving rise to acetic acid, the latter in turn becoming in part formic acid and finally breaking up into H and CO₂. Scruel denies this, and asserts that the three acids, lactic, acetic and formic, are formed independently and that the formic acid alone is further decomposed into H and CO₂. Single molecules of these three acids added together are equal to one molecule of glucose plus one atom of oxygen.

$$CH_2O_2$$
 (formic) + $C_2H_4O_2$ (acetic) + $C_3H_6O_3$ (lactic)
= $C_6H_{12}O_6$ (glucose) + O.

Scruel therefore regards the whole process as one of oxidation. The objections to both of these explanations are very evident, because both disregard the fact that there are other products besides the acids and that the reaction is the same in the absence of oxygen as in its presence and therefore cannot be a simple oxidation.

Ide answers these objections by claiming that the reaction is a more complex one still. He holds that only part of each molecule of sugar goes to form the acids, the remainder being split up into methane, acctone and the volatile body giving the reaction of iodoform. The acids, moreover, are formed separately, not more than one or two being derived from a single molecule of sugar. This divergence of opinion only goes to prove that the process of acid fermentation is not yet thoroughly understood.

Bischler, Van Ermengem and Van Laer have studied the optical characters of the lactic acid produced by different varieties and find that that generated by the typical bacillus coli communis polarizes light to the right, while that produced by the more actively motile forms, polarizes light to the left. Intermediate forms produce an acid which is optically

inactive.

(c) Action on Albuminoid Substances.— Escherich, Köhler and Scruel have observed that the bacillus coli communis attacks caseine and peptone very slowly and has, therefore, only a feeble proteolytic power. In solutions containing nitrogen in simple combination, such as the tartrate of ammonia, it grows abundantly, provided a small amount of glucose or lactose is present.

(To be continued.)

THE MEDICINE-MEN AMONG THE CROW INDIANS.

BY P. P. PRANDO,

Missionary to the Crows.

THE medicine-men are a prominent feature among the Indians. They are men of power, and are looked upon with respect by the others. Their secrets, mysteries, incantations, etc., are imparted to no one outside of their sect.

I have been sixteen years among Indians, have studied carefully their ways of thinking and reasoning, their customs, laws and language, and in particular have given great attention to the medicine-men. Having won their confidence, I was admitted to their secret performances, while all others who happened to be present in the tepee were driven from it before the medicine began.

The Indians have great confidence in these men. They turn over the sick to them, and they pay them well, sometimes using two or three medicine-men, who alternately exercise their art until there is some result.

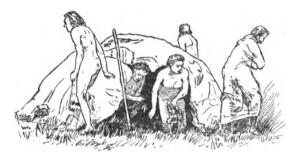
A woman was telling me that her child was sick, that she would send for an Indian doctor, pay him well, and her child would certainly recover. She added: "If we don't pay the medicine-men, there will be no cure; but when we pay them well, their medicine works like a charm. I will do so. I have plenty of horses."

The medicine-men accept very willingly whatever they are offered for their services; sometimes they impose on the sick, and take away what the patient does not want to give them. A poor woman came crying to me one day; a rattlesnake had bitten her horse, and the medicine-man after his performance on the horse had taken away all she possessed, namely, one dollar and a blanket. "I have no blanket," she said; "my horse is not cured, he cannot walk, I am on And with a flash of indignation, stooping down she lifted up a handful of dust, saying, "There is my property; I am the owner of dust." I endeavored to calm the poor woman, and sent for the medicine-man. He came after a little while, and I had him give back her property because the horse was not cured. that he did was to cut the horse in several places with his pocket-knife, and sprinkle the wounds with an infusion of peppermint.

To have a steam-bath the Indians take about a dozen willows and stick them in a circle in the ground, the circle having six or eight feet diameter. They lower and tie the top of one willow with the other of the opposite side forming the frame of the sweathouse, which now looks like a big basket upside down. They cover the frame with blankets, start a big fire outside, and put stones in the fire. The stones generally are boulders not quite as big as the head of a man. When the stones are hot they push them into the centre of the sweat-house with a stick and make a heap of them. Now, people strip themselves and go in with a bucket of water, lower the blanket at the door and are in perfect darkness. They put a few cups of water on the hot stones, and the steam rises up. The Indians lay flat on the ground, the steam condenses itself first on the upper part of the sweat-house descending gradually till it reaches their prostrate forms, that now begin to sweat. In from five to ten minutes they give

door is raised, the steam comes out like dense smoke, and the Indians fill their lungs with fresh air. After a few minutes the blanket at the door is lowered again, more water is poured on the stones, and the Indians get hot again. The blanket is now raised at the door, the Indians come out, the sweat pouring profusely from all the pores of their bodies. Some of them run and plunge themselves into the river, enjoying a fresh bath; others lay flat on the ground and let the wind wipe their sweat with a cooling evaporation.

The Crow women are fond of the sweat-house, just as well as the men, and generally they go in together. Beside the virtue of a diaphoretic, the Indians attach to the sweat-house their superstition, and while they sweat they turn it into a house of prayer. They pray very loud, so all people can hear them from the outside. When there is a question of undertaking anything of importance, they build the sweat-house, praying for themselves and cursing their enemies. Sometimes the sweat-house is used for some very bad purposes indeed.



The medicine-men make use of the sweat-house in some cases to advantage; yet it is oftener dangerous on account of their indiscretion in passing from extreme heat to extreme cold. I myself have seen people affected with acute pleurisy thrown out naked from the sweat-house right into the snow. The consequence was death.

Their materia medica embraces a few roots, used as cathartics or emetics. Outside of these there are few real remedies; the rest consists in singing, beating the drum, pretending to suck out pus or the evil spirit from the body of the patient, in using the pipe, curiously shaped stones, stuffed birds, little animals, with a variety of ceremonies that only an Indian brain can invent, in imitating the bellowing of a bull or the hissing of a snake, etc., finishing the ceremony by pressing the sick person's stomach with their fists, with sticks, sometimes even trampling with their feet the chest of the patient.

Beating the drum and singing different wild tunes is a great medicine. For an Indian very swollen up and in great pain, the medicine-man held his hand over the fire; and when he felt it warm, he raised it in the air above the body of the patient; moving it with great celerity just as if he had delirium tremens—meanwhile he may be either singing, imitating the hissing of a snake or the report of a gun.

in perfect darkness. They put a few cups of water on the hot stones, and the steam rises up. The Indians lay flat on the ground, the steam condenses itself first on the upper part of the sweat-house descending gradually till it reaches their prostrate forms, that now begin to sweat. In from five to ten minutes they give the sign to the assistant outside, the blanket at the body of the patient. Some blow it with their mouth;

others take off the stem, and blow the smoke through the stem, enveloping the patient with the smoke from head to foot. Others cover the bowl of the pipe with a piece of cloth, and applying their lips to the cloth, they blow the smoke through the stem.

Little stuffed animals, or peculiar stones like petrified snails, or snakes made with rags, are used to touch the patient. All the objects are carefully wrapped up in cloth or buckskin, and put away in little bags ornamented with beads. When there is some particular dance, all the medicine-men bring sacks filled with these little bags of medicine, and set them in the centre of the dance, making quite a show.

There are many medicine-men among the Crows, though some are more prominent than others. However, when they take the notion, we can say that every Indian man or woman is a medicine-man.

Once I came to a lodge, and dismounting from my horse wanted to go in. Some people cried out, "They are making medicine." That meant, You can't go in. I spoke to the medicine-man inside, telling him that I was a medicine-man myself, that I wanted to get in and see his medicine. He answered, "Come in." There was a consumptive young man laying on the ground all but naked. The medicine-man was sitting near by; an old woman was sitting down at the feet of the patient. The medicine-man had a bucket of water, and was holding in his hand a stick on the top of which he had tied some buffalo hair. From time to time he dipped this aspersorium into the bucket and sprinkled the patient. The young man did not like the cold water, and showed his displeasure by grimaces. The old man then applied his lips to the ribs of the sick man and sucked, then with two fingers took out something from his mouth and put it carefully into the hand of the old squaw. He repeated the sucking in several parts of the body, each time putting in the hand of the woman what he sucked out from the patient. Seizing the opportunity when he was putting his fingers in his mouth, I stretched forth my hand to receive the things instead of the woman. The old man put it in my hand, and closed my fingers; having my hand free I opened it, and there I had - a little piece of finger-nail. He had that poor woman and the patient believing that he was sucking those things out of the body of the sick, and that was the ailment of the | right. poor man, and he was relieving him of those formations in his body.

At another time I was in a house when a boy about ten years old was sick with malarial fever. A medicine-man came in with great solemnity, carrying a little bag with some herbs. He steeped the bag, and with two fingers pressed him in different places to find out his complaint. At last he pointed to the ribs below the right nipple, saying, "It is here." He put some wild herbs in his mouth, chewed them, and squirted them on the body of the boy. Then he began to roar and act as a mad bull, and applying his lips to the ribs he began to suck, and to move his head from one side to the other as if he were pulling out of the ground a root with his teeth. He got up and from his mouth let flow a stream of green saliva into his left hand. The boy's grandmother exclaimed in great wonder to me, "Look how he got out the pus." Instantly I jumped to my feet before the medicine-man, she used her right foot to trample him with great and as if I were about to fight I cried out, "You are a liar; that is not pus, it is the sap of the herb you were chewing just now." The medicine-man was not pre-

pared for this sudden outbreak; he weakened, and said, "You are right, it is not pus, it is the juice of the berb."

To press the stomach of the sick person with both hands, just as bakers knead their dough, is another feature of the Indian medicine. Their object is either to move the bowels, or to drive away the evil spirit.

A young man was pressing in this way a dying relation. I asked the reason. The young man said that inside the stomach of his brother there was a snake going up by degrees towards the heart, so he was endeavoring to kill the snake, because it would be sure death for his brother as soon as the snake reached the heart.



A very sick Indian complained of a sore throat. The medicine man sang a song, and putting his pipe-stem in his mouth, he blew all around the throat of the patient; then with his left hand he raised up the chin of the sick man, and with his pipe-stem struck gently several times the sick man's throat. The same man after a little while complained that he could not see. Another medicine-man went to try his skill. He sang a song; he put his left arm around the head of the patient who was sitting on his blanket on the ground, and with the palm of his hand struck him several times on the top of the head, asking, "Can you see?" The patient said, "No." "Can't you see me?" insisted the medicine-man. "Oh, yes," said the hopeless sick man; and the medicine was all

But the worst of all is when they trample the sick people with their feet. On the 14th day of August, 1891, I was camped at the foot of the Big Horn Mountains. An old Indian with his wife were camped near by. The woman — by name, "She-Strikes-the-Rider-of-the-Spotted-Horse" - after she had pressed her husband with her hands, stood on the chest of the man, and was trampling him. She wanted to make him vomit. I rushed at the woman; I pulled her off her victim. In the afternoon when the sick man was bathing in the creek, the woman came to me, saying that her husband wanted her to trample him. I told her that the Indians had iron ears, that they did not want to hear what was for their good; so they could do just as they pleased. The man came out of the creek, and lay down flat on his back. He had only his breech-cloth on. The woman jumped on his chest and began to trample him; standing on her left foot,

astonishment was to see the woman standing on the body, and, under the impression that he was still breathing, continue to trample him. Another woman came; they then dragged the body inside of the lodge, and both of them pressed the body with their hands, looking at his face. After a few minutes life was extinct. They at once wrapped the dead body in a blanket, tied it with a rope, and carried it with great sighs of mourning to the burying-ground.

Clinical Department.

A CASE OF FIBRO-CYSTIC DISEASE OF BOTH OVARIES; TOTAL EXTIRPATION OF THE TUMOR AND UTERUS; RECOVERY.

BY RICHARD HOGNER, M.D., BOSTON.

MRS. NANNY O., twenty-nine years old, and married about eight years, has been without children or miscarriages. For several years she has suffered from excessive and long-continued menses of frequent occurrence, coming on about every two weeks and lasting for seven or eight days. This was accompanied with severe pain in the back and in the left groin.

My notes of an early examination are: enlarged as if in the fourth month of pregnancy, but hard and with some small eminences on the right and above; the right ovary and tube could not be distinguished; the left was in its normal place, hardened, uneven, and enlarged to the size of a hen's egg; the left tube was palpable and thickened; manipulation of the lumbo-dorsalis and glutei, especially the left, showed painful and tender myosites.

The family history shows that the patient had a sister about forty years old, who died in June, 1893, of sarcoma-cystica-ovariorum, leaving two children, aged ten and seven years. The patient was advised to undergo an operation, which, however, she declined.

Under the circumstances I promised to do something to relieve her suffering, and commenced with gynecological kinesitherapy, according to the method of Thure Brandt, and with Swedish medical gymnastics, on the 27th of last October. Massage was given bimanually to the left ovary and tube, because I believed there was a condition of oophoritis and paraoophoritis, and movements leading the blood from the pelvic organs. Hard massage was also given for the myosites of the glutei and lumbo-dorsalis muscles. did not treat the tumor at all, regarding it as a movable, equally affected fibroid uterus which has not become very hard.

After six weeks' treatment the patient felt quite well, had increased in strength, both physically and mentally; and treatment was discontinued, as it could do no further good. The left ovary had decreased about one-third its former size, the tenderness had gone, and the myosites had disappeared. The menses were regulated to about twenty-seven days, and to a

duration of but three days.

Since that time, one half-year, she has been regular except for two periods, when the menses returned in three weeks and lasted for five days. She was able to do all her household work without assistance until last May, when, after washing, she carried a heavy basket of clothes up and down stairs, at once experiencing abdominal pain which necessitated her going to 1 British Medical Journal, May 5, 1894.

bed, and in a few days calling for medical assistance. I then found her with distended abdomen, very tender to the touch; the so-called uterus enlarged as in the sixth month of pregnancy and painful to pressure; diffuse pelvic peritonitis, with exudation in the parametria; fever, and an abundant metrorrhagia, which continued for three or four days with imminent danger to the patient's life. She recovered, however, although, in consequence, a nephritis, endocarditis acuta, and a slight pneumonia embolica followed. At the end of eight weeks she was up and about again, and one month later surprised me by calling at my office. An examination at this time showed what was considered the uterus to be of the former shape and size as in July, 1893, and the left ovary just as it was at the close of the massage treatment nine months ago, but the left parametrium and ovarium were tender. right ovary and tube were yet undiscovered. Her regular menstruation returned a month after her severe hemorrhage and was of normal duration.

Remembering the case of her sister and also the character of the hemorrhage, I insisted on an operation, which she consented to, being fully conscious of all

its dangers. Consulting Dr. Albert H. Tuttle, he endorsed my opinions, and consented to operate for the total extirpation of the uterus and ovaries. operation was performed by Dr. Tuttle, September 11th, after the combined method of vaginal and abdominal routes devised by this operator. The subsequent history of the patient to complete recovery is unmarked by any event of special interest; the course was afebrile, the temperature never reaching 100° F., and the abdominal and vaginal incisions healed by first intention; at no time was there any tympanites, and

flatus passed spontaneously from the rectum on the second day.

The specimens removed proved to be a large fibrocystic ovarian tumor from the right side, the size of a five months' uterus, which pushed the uterus forward and to the left, and which undoubtedly was the mass supposed to be that organ; on the left side the tumor was smaller, about the size of a small hen's egg, and firmer; the uterus was somewhat enlarged and presented the conditions of a hyperplastic endometritis. There was firm adhesions everywhere about the tumors, and cicatricial evidence of former attacks of circumscribed peritonitis. It is not too much to infer that this case would have suffered the same fate as her sister but for timely surgical interference.

Medical Progress.

RECENT PROGRESS IN SURGERY. BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

ANESTHESIA.

GEHEIMRATH GURLT 1 read the yearly report of the collective inquiry into the statistics of narcotization. It embraces 51,846 narcoses of the year 1893. Of these 32,723 were produced by chloroform; 11,617 by ether; 3,896 by chloroform and ether; 750 by chloroform, ether and alcohol (Billroth's mixture); and 2,769 by ethyl-bromide. A number of laughing-gas narcotizations are added. These 51,846 surgical narcoses

count 20 deaths; and of these, again, 17 are after chloroform. Thus, the average proportion was one death to 2,587 narcoses, and one death to 1,924 chloroform narcoses. In the four years during which the inquiry has been carried on, only one death after ether has been noted; and accordingly, the use of ether has increased from 6,200 cases in 1892 to 11,600 in 1893. The chloroform-ether mixture was used 1,200 times in 1892 and 3,800 times in 1893. Pictet's chloroform (purified by exposure to extremely low temperature) was used 3,182 times, as against 708 in 1892. In spite, however, of this and other purified chloroforms at the present in use, death during chloroform narcosis has not proved preventable; and the general opinion now is that it is not caused by the chemical impurities contained in ordinary chloroform.

THE EFFECT OF CHLOROFORM AND ETHER ON THE KIDNEYS.

Wunderlich has investigated the urine of 125 patients before and after anesthetization at Professor Brun's Clinic. Albumin was found in five cases before operation and in eighteen after it. In three of these five ether (which was used) increased the amount of albumin. In the other thirteen cases the albumin was only a trace. The conclusions of the writer are that albuminuria when present is increased by ether (chloroform was not tried in any of these cases); that albuminuria can be caused by ether or chloroform, but more frequently with the latter, in the ratio of 11.5 to 6.9 per cent.; that after chloroform, less frequently with ether, casts appear in the urine, in the ratio of 34.8 to 24.6; and that when casts were previously present, both anesthetics increased the number.

THE SURGICAL USE OF BLOOD SERUM.

At the April meeting of German Surgeons C. L. Schleich (Berlin) reported the method of using blood serum in the treatment of wounds and skin diseases. Blood serum was used in three or four preparations:

(1) Pasta serosa. Fresh bovine-blood serum mixed with 25 per cent. powdered zinc oxide, dried in a thin layer on a glass plate, removed by scraping, finely pulverized, and sterilized at 70° C. in a thermostat. Used by mixing with water to a paste.

(2) Pulvis serosa, the pasta serosa heated to 100° C.

(3) Pulvis serosa, with iodoform.

(4) Pulvis serosa, with nuclein — pulvis serosa, to which two to three per cent. of nuclein has been added.

(5) Pasta serosa, with hydragyrum.

The pasta serosa is non-irritating, free from acids, and was used as a covering for eczema, gangrene blebs, or denuded surfaces. It was spread on the surface, where it dried in a few moments, and thus formed a covering which was similar to a natural serous crust. The pulvis serosa, with or without iodoform, Scheleich considers to act as well as the method of healing by organized blood-clot proposed by Leliede. The powder is sprinkled on the wound, dries it up quickly, and forms a dry crust. The pulvis serosa with nuclein is used for wounds not wholly aseptic. By a process similar to digestion all portions of necrotic tissue are removed without injury to healthy tissue. The wound surface is rapidly cleansed of coatings of fibrin and bits of connective tissue and fascia as if by a curette. The mercury paste is used by applying three to five grammes

Annals of Surgery, 1894, vol. xx. p. 630.
 Centbl. f. Chir., 1894, Bd. xxi, Beilage S. 11.

smoothly with a brush, and allowing it to dry. After three days it is washed off.

TREPHINING IN CEREBRAL INJURIES.

A. v. Bergmann, divided cases in which trephining is demanded, as regards the time of operation, whether demanded primarily or secondarily. Among the primary he would include compound fractures where the brain is exposed or is apparently lacerated by bone-In these cases the indications are unquestioned, as are also those where there are present symptoms of acute compression or rupture of sinuses or veins. The author would also include cases in which foreign bodies are left in the wound. In gunshot wounds primary-trephining is indicated where the bone wound is extensive and bleeding persists. If, however, the ball remains within and there is no fever, it should be left alone; secondary trephining is, however, generally called for. Secondary trephining is indicated by febrile reaction, abscesses, softening, and the formation of cysts and brain-scars. The author reports two cases of gunshot wounds and two cases of localized areas of softening, which he defines as a region of reddened, compressed brain-substance, in which is found a varying amount of extravasated blood. Its demarcation from the sound brain-substance is more or less sharply defined. He believes that the localization of such an area is an indication for operation.

MUSCULAR MACROGLOSSUS.

K. Eickenbusch 5 reports two cases of macroglossus, one of which was of the more common lymphatic type (hematolymphangioma mixum), while the other, which on account of its rarity attracts especial attention, was found to be caused histologically by a hyperplasia and hypertrophy of muscular fibre with few vessels and a small amount of connective tissue. Eickenbusch has called this latter form "macroglossus musculäre." The characteristics of this affection are that the growth is a slow, regular, uninterrupted one; that the motion of the tongue is greater than in the other type; and that the surface is smooth, with no increase in size of the papillæ. The prognosis in this type is favorable, since multiple incisions have a very beneficial effect.

THE AFTER-TREATMENT OF TONGUE EXCISIONS.

Henry T. Butlin, F.R.C.S.,6 states that the aftertreatment of operations on the tongue should be chiefly directed to (1) maintaining the wound in the mouth as aseptic as possible, (2) diminishing the tendency of the wound-discharges to pass down the air-passages, (3) preventing food from passing down the traches into the lungs.

The first indication is best fulfilled by the frequent use of powdered iodoform to the mouth wound. soon as the operation is over, and before the patient is put back to bed, the surface of the fresh wound is dusted with powdered iodoform; and for a week or ten days iodoform is blown onto the surface of the wound by means of a proper insufflator. In addition, the patient may use a mouth-wash of Condy's fluid or weak carbolic solution to help to cleanse the interior of the mouth of the fluids which collect there.

The second indication requires that the patient's

⁴ St. Petersburger med. Woch., 1893, No. 51; American Journal of the Medical Sciences, October, 1894, No. 270, p. 496.
⁵ Beitrag. z. Klin. Chir., 1894, xi, 2, p. 273.
⁶ British Medical Journal, April 14, 1894; Annals of Surgery, August, 1894, vol. xx, p. 231.

head should be kept low, and that he should lie on one Butlin only allows one small pillow, and insists that he should lie well over on the side from which the greatest amount of tongue has been removed. The discharges then have a tendency to sink into the cheek, and are frequently washed out or allowed to run out, and there is thus the least possible inclination of discharges to sink down towards the back of the mouth and larynx.

The feeding of these patients needs very great at-When only half of the tongue (whether a lateral half or the front half) or two-thirds has been removed, liquids can generally easily be taken on the day following the operation from a feeder with a spout, provided a piece of india-rubber tubing, three or four inches long, be fixed onto the spout. If the right half of the tongue has been removed, the patient should lie over on the left side during feeding, so that the food is kept as far as possible away from the wound, and passes over the parts which have been least interfered with.

When the whole of the tongue has been removed, the difficulty of swallowing is much greater, and many days may elapse before the patient acquires the knack of swallowing liquids without permitting a small quantity to pass down the air tubes. During the first fortyeight hours these patients are fed through the rectum with nutrient enemata. At the end of that period the patient may make a first attempt to swallow a little liquid, and water should be chosen for the experiment, because the entrance of a little water into the trachea is seldom followed by any serious consequences.

Milk and beef-tea are more dangerous; they hang about the air tubes, are difficult to get rid of, and are very prone to undergo rapid decomposition, and occasion the much-dreaded swallowing pneumonia (Schluckpneumonie). If the experiment is successful other liquids may be tried, and the problem of feeding is really overcome. But, if there is any difficulty, the patient, as long as may be necessary, should be fed through a tube. No instrument is so good for this purpose as a black bulbous catheter, about No. 9 or 10, attached to a long piece of india-rubber tubing, to the other end of which a small glass funnel is fixed.

The throat is first sprayed with a three or four per cent. solution of cocaine; the tubing is clamped with forceps just above the attachment of the catheter, and the funnel and tubing are filled down to the clamp forceps with warm food. The catheter is very gently passed down the pharynx, and hitches at the posterior border of the larynx. The patient is directed to swallow, and as he does so the catheter is easily passed on into the esophagus. For the moment discomfort is created, and the patient often struggles. He is directed to close his mouth, and no attempt is made to pass the catheter farther down for half a minute or longer. Then it is slowly and gently passed down to a distance of about eleven inches from the teeth. When the annoyance from the presence of the catheter has ceased, the clamp is removed and the food is allowed to run slowly down into the stomach. If there is an inclination to regurgitation or to cough, the descent of liquid is instantly arrested by pressing on the tubing with the finger and thumb, and the nurse lowers the funnel until the dangerous moment has passed. By attention to these details a pint or a pint and a half of liquid to these details a pint or a pint and a half of liquid
may easily be introduced into the stomach without
danger. Before removing the catheter the funnel is

Toentbl. f. Chir., 1894, Bd. xxi.
Centbl.
raised high up, so as to get rid of the contents of the tube; and during the actual removal of the catheter the tubing is kept tightly pressed between the finger and thumb in order to prevent the entrance of even a few drops into the larvnx. Patients are often so satisfied with this method of feeding that they have sometimes insisted on being fed through a tube for a much longer period than was really necessary.

A NEW OPERATION FOR BONY ANCHYLOSIS OF THE

Helferich has cured a patient (a girl, eight years old) suffering from a unilateral (left) anchylosis of the jaw of one year's duration by the following method. The result enabled the patient to open the mouth without any limitation of motion. The method consists of interposing a muscular flap between the bony resected ends of the jaw which prevented bony union. After resecting a moderately large piece of bone with its periosteum, Helferich cut a flap about two fingers wide, and including its whole thickness, from the temporal muscle, the base being below. The zygomatic arch was resected and the flap turned down so as to allow the end to be carefully "implanted" in the bony defect in the jaw. It was then fastened by two sutures.

OMPHALECTOMY IN THE TREATMENT OF UMBILICAL HERNIA.

Prof. P. Bruns 8 advocates a modification of Condamin's operation for the permanent cure of umbilical hernia. It consists in making the skin incision around one side of the hernial tumor, but commencing and ending in the median line. It is outside the ring, and exposes the peritoneum throughout its entire length. The inner edge, with the hernia, is drawn aside; and the ring thus exposed and the sac are divided transversely. This allows access to the interior of the sac, and enables the operator to easily examine and reduce its contents. After the above is accomplished, an incision similar to the skin incision completes the excision of the sac and ring, which are removed together. The abdominal wound thus left is sutured by deep sutures passed entirely through all layers, and the peritoneum reinforced by superficial skin sutures. The advantages claimed by Bruns for this method are that it enables the surgeon to more easily and rapidly reduce the contents of the sac. He can recognize more easily the contents of the sac, since he has access from the peritoneal side. The intestine is less liable to be injured than with the median incision commonly used. The wound unites more firmly, since the fibrous hernial ring is removed, and recurrence is less liable to recur.

A NEW METHOD FOR THE RADICAL TREATMENT OF FRMORAL HERNIÆ.

Fabricius, describes the following operation: An incision four to five inches long is made from the insertion of Poupart's ligament, parallel to it, down through the superficial fascia, exposing the superficial epigastric vein. If the hernia passes under the lesser falciform process, the sac may now be seen; if, however, it has passed beneath the superficial layer of the fascia lata, that must be cut before it is exposed. The

hernia should now be reduced, the sac ligated and removed, and the stump returned into the abdomen. If the constriction is too great, Poupart's ligament should be divided at its insertion on the inner edge of the horizontal ramus of the pubes, or, where it is possible, on Cooper's ligament. This relaxation of the ligament also permits the full exploration of the hernial canal and the removal of any lymphatic glands or tissue it may contain, and makes possible the suturing as described later.

After the crural sheath has been freed, with the contained vessels, it should be displaced outwardly over the illio-pectineal eminence, where they should be held by a blunt hook, while Poupart's ligament is sutured to the horizontal ramus of the pubes. sharply curved needle should be used, and the stitch should take in about three-eighths of an inch of tissue above Poupart's ligament, the horizontal portion of the pectineal fascia, the primary fascicles of the pectineal muscle and the periosteum. In inserting the first stitch next to the large vessels, care should be taken to avoid the inferior epigastric artery and vein. The ligament should be sutured from that point to the pubic spine, uniting it again to the inner border of the horizontal ramus. Care must be taken in all cases to include the periosteum. The superficial portion of the fascia lata may or may not be sutured to the pectineal fascia. To prevent inguinal hernia the pillars of the external ring should be sutured. There is no danger of obstructing the circulation by the displacement of the artery and vein, though there may be slight edema at first.

A NEW OPERATION FOR THE RADICAL CURE OF FEMORAL HERNIA.

The success attending his method of treating inguinal hernia has led Dr. Ed. Bassini, of Padua, 10 to publish his method for the radical cure of femoral hernia.

The operation is done by placing the patient on the back, with the pelvis elevated. An incision is made parallel to Poupart's ligament, with its centre over the centre of the tumor. The incision is carried down to the sac, which is isolated and opened. The bowel is replaced and the sac ligated and removed. Poupart's ligament, the pectineal fascia, the pectineal line, and the falciform fascia are now recognized. With a curved needle and fine silk Poupart's ligament is sewed to the pectineal fascia at its origin from the pectineal line. Three sutures are sufficient. The first perforates Poupart's ligament near the spine of the pubis; the second is placed one-half a centimetre externally; and the third is placed one centimetre inter-nal to the femoral vein. These sutures are not tied until after the others are placed. Four other sutures are passed through the edge of the falciform fascia, and then through the pectineal fascia a little internal to the points of entrance in the falciform. The lower suture is placed just above the saphenous vein. The sutures are now tied. The upper ones draw Poupart's ligament backward to the pectineal line and close the mouth of the canal; the other sutures approximate the anterior and posterior walls of the canal. The skin is next sutured and no drainage used.

The author has done fifty-four operations on fiftyone individuals, all of whom were cured and left the

¹⁰ Archiv. für Klin. Chir., Bd. 47; Annals of Surgery, October, 1894.

clinic in from eight to twenty days. Forty-one cases have been kept under observation from two to nine years, and in no case has a recurrence occurred.

RECENT METHODS OF GASTROSTOMY FOR STRICTURE OF THE ESOPHAGUS.

Dr. Willy Meyer 11 considers this subject, and sums up as follows:

(1) There are now three useful and reliable methods of gastrostomy at the surgeon's disposal. Of these, one (Witzel's) prevents leakage with absolute certainty. The two others, if properly carried out, promise the same good result. Thus the patient who has been submitted to this operation will not starve from regurgitation of the food alongside the tube.

(2) In view of this fact, gastrostomy should be resorted to "early" in cases that will sooner or later

need this operation.

(3) In cases of burn of the esophagus, primary gastrostomy and timely dilatation of the contracting scar will most probably prevent conditions which at present generally confront the surgeon in this class of cases, and are sometimes incurable. Witzel's method of gastrostomy deserves preference. The oblique canal produced by it will close spontaneously when the tube has been removed. Thus a secondary operation will not be needed.

(4) In cases of cancer of the esophagus a gastric fistula should be established as soon as the scales show a steady decrease of the patient's weight.

- (5) Further experience is needed with reference to Ssabanejew-Frank's method before an attempt can be made at giving each of the three operations its proper place in the treatment of cancerous stenosis. If future observations be favorable, Ssabanejew-Frank's operation seems to be destined to become the standard one for malignant stricture of the esophagus. If unfavorable, Witzel's method should be done wherever it can be carried out.
- (6) Van Hacker's method should then be reserved for far-gone cases, and should, if the patient be very weak, be done under cocaine-anesthesia, best at two sittings. If properly performed, the outlook for making the fistula close tightly around the tube is good.

GASTRO ENTEROSTOMIE.

F. Schröter has reviewed the work in this branch of surgery during the past twelve years, and has reported the facts relating to the indications, methods and results.¹⁸

The chief indication for operation is cancer of the pylorus, if marked cachexia is not present. Cases where the stomach wall is extensively involved, where lymph glands and adjacent organs are involved, or where extensive adhesions to surrounding structures are present, are especially suitable for operation.

Where gastrostomie is of value is in cases of non-malignant pylorus stenosis. It is found to give as permanent relief as extirpation. It has also been used to relieve patients with stenosis of the duodenum and dilated stomachs where dilitation was not due to stenosis.

Schröter discusses the different methods of technique, and especially describes Sonnenburg's recent method of suturing the stomach and intestine, which has left an opening easily patent for the index finger and

11 American Journal of the Medical Sciences, October, 1894, No. 270, p. 426.
12 Deutsch Zeitsch. f. Chir., 1894, xxx, 2 u. 3, p. 296.

has been quite satisfactory in two cases. It is thus described: The intestine is incised in the usual manner, and the mucous membrane stitched to the edge of the wound with an interrupted catgut suture so as to cover it. The sutures are cut short. The stomach is next incised and the edges of the incision sutured in a similar manner, except the ends are tied together in one knot instead of being cut off. A small incision is now made in the intestine, two centimetres distant from the anastomosis incision. ends of the gastric suture are passed into the intestine through the first incision and out through the latter. By pulling these the stomach wound can be drawn into the lumen of the intestine so that it projects, funnel-like, in the direction of the fecal current. It is then sutured in this position. When the anastomosis is complete, the suture ends used to pull the stomach into place are cut off and drawn out of the intestine through the smaller opening, and the latter closed by

TORSION FOR RECTAL INCONTINENCE.

A recent paper of Dr. Gerster on this subject 18 is interesting as furnishing additional information respecting the method reported by Gersuny, of Vienna, for the treatment of rectal incontinence described in detail in a previous report.14 The incontinence may be due to congenital absence of the sphincter ani, to paralysis of the sphincter from spinal lesions, or surgical injuries due to traumatism or operation. Gerster has used torsion with success to relieve incontinence. He rotates the free end of the gut around its own axis so as to arrange the folds of mucous membrane in spirals. The twisted gut is then sutured to the edges of the external wound. The amount of torsion is gauged by the amount of resistance felt by the index finger on introduction. He did not in two cases make more than one complete twist, but more than one revolution might be required when the freed end of the rectum was long, that is, when five to six inches had been excised and the end drawn down. If not twisted at once, the operation of torsion must be delayed till the rectum is fixed in a mass of granulations to the surrounding soft parts. It is then dissected clear for two to three inches, and twisted till the necessary resistance is obtained. Which method is preferable is not yet known. Gerster has never performed torsion immediately after extirpation, only after dissecting out the rectum, the proximal end when the dissection ended being fixed firmly when torsion was made.

RADICAL CURE OF HYDROCELE.

Neumann 15 has cured six patients by allowing the canula through which the hydrocele fluid was evacuated to remain in situ in the sac of the tunica vaginalis for two to three days under an antiseptic dressing. In all cases adhesion of the parietal and visceral layers occurred without inflammation or suppuration.

THE FILLING OF BONE DEFECTS WITH FOREIGN MA-

Martin 16 in an interesting paper discusses the results which he obtained in following up the line of research originated by Dreesmann and Mayer.

He showed that in dogs aseptic plaster-of-Paris and

base-plate gutta-percha can be used to fill up bone defects, and that the filling will be covered over by either primary or secondary union of the soft parts.

In the first case cited, the wound healed smoothly by primary union over a filling of plaster-of-Paris, and the dog made a complete recovery. In the second case plaster was also used, but the dog tore away the dressings and opened the wound; some of the plaster escaped, but the wound healed by granulation. The post mortem examination, made twelve and one-half months after the operation, showed that the plaster had been absorbed and that the bone defect had been completely replaced by new bone tissue.

In the cases in which base-plate gutta-percha was used, primary union followed in the first case, and the post-mortem made five months after operation showed the gutta-percha fast and immovable in the medullary canal, completely surrounded by healthy bone. The second dog showed on post-mortem, eight and one-half months after operation, the gutta-percha all but surrounded by solid bone, only touching the soft parts in one small point; although the dog had torn away the dressings and opened the wound, it had healed by granulation. There had apparently been partial absorption of gutta-percha, since it had been replaced where it lay outside the medullary canal, by hard bone tissue in both cases. In contrasting it with the plaster-of-Paris it was noted that it was not so readily absorbed. The use of plaster-of-Paris is perhaps a little easier; it should, however, be reserved for large cavities, the use of gutta-percha being limited by the amount of bone defect. Plaster-of-Paris is more easily removed when it is necessary.

The gutta-percha has the advantage of being both resistant and elastic when it is hardened. It should, therefore, be used where considerable resistance is required, as where the bone-walls are thin; but in cases where considerable strength is required, as solutions of continuity and total loss of bone substance, nothing can be expected of this method, and ivory is to be preferred.

The good restoration of the form of the bone is noteworthy, as shown by the complete covering of the gutta-percha filling by the new bone-growth.

The author believes that it is more necessary, in order to make progress, to find a method that will make bone cavities aseptic, than to find, as some experimenters have tried to do, an antiseptic substance that may be used to fill the cavity in the bone. He does not, however, mean to imply that plaster of-Paris and gutta-percha are the only substances that are nonirritating and yet suitable for the purpose.

An advance in the antisepsis in bone cavities has been made by Dreesmann, who employed boiling oil. But the practical results of this method are not what they might be, as there is produced a slough which separates the living tissue from the material used to fill the cavity, and this forms a culture medium for bacteria.

NEUDORFER'S METHOD OF AMPUTATING EXTREMITIES.

A. H. Meisenbach, M.D., 17 Professor of Surgery in the Marion Sims College of Medicine, relates his experience with this new method of amputating. method is presented, and may be tried in selected cases. It is certain that many stumps which are produced by the classical amputations are far from ideal.

<sup>Annals of Surgery, 1894, vol. xx. p. 612.
Hoeton Medical and Surgical Journal, 1894, vol. cxxx, p. 386.
Wiener Medizinisohe Presse, 1893, No. 45.
Gent, f. Chir., 1894, No. 9; American Journal of Medical Sciences, July, 1894, p. 99.</sup>

¹⁷ Annals of Surgery, September, 1894, vol. 20, No. 3, p. 365.

"Neudorfer applies the principles of the technique involved in this method both to amputations in continuity and in contiguity. I shall deal in this paper only with amoutations in continuity. The amputations in continuity are divided -

"(1) Through regions where there is only a single bone to be divided, as in the thigh and in the upper

"(2) Through regions where there are two bones

to be divided, as in the forearm and in the leg.

"Technique where One Bone is divided. - The first step in the operation is to determine the point at which the bone is to be divided. For example, we will assume that we wish to amputate the thigh at the junction of the lower with the middle third. bloodless operation of Esmarch is employed, the limb is first rendered bloodless by the application of a bandage and constrictor. If the bloodless method is not employed, the vessels are controlled either by a constrictor or by the fingers of an assistant. determined the point where we wish to divide the bone, an incision is made with a sharp pointed, strong resection knife, extending downward, in the long axis of the limb, through the soft parts and periosteum. The incision should be made on the lateral or anterior aspect of the limb, where the bone is more superficial, and where the larger vessels and nerves are avoided. the thigh, the incision should be made about twelve centimetres in length, or about four and a half inches. With large-sized retractors the soft parts are held The periosteum is now thoroughly loosened from the bone in the line of the incision with a With the chisel the bone is cut through at the upper angle of the wound (line for division) as in an osteotomy. The lower fragment is luxated through the slit in the periosteum, and the membrane (periosteum) carefully stripped from the bone.

"The soft parts are now divided at the site of the lower angle of the wound, in one place cut transversely to the axis of the limb, with an amputating-knife, scalpel, or even with a large pair of scissors. The vessels are next secured by ligatures. Having secured the vessels, the periosteum is stitched together with a fine catgut, continuous, buried suture, both longitudinally and transversely, obliterating the cavity of the periosteum which was occupied by the bone. The muscles are now united by a continuous, buried, catgut suture, and

finally, the skin in the same manner.

"In amputations of the upper arm the incision is made on the outer aspect of the limb, and is to be about six centimetres or two and a fourth or two and a half inches in length. The other steps in the operation are the same as described for amputations of the thigh.

"Technique where Two Bones are to be divided. The same technique is carried out in amputations of the leg and forearm, with the exception that an osteotomy of two bones must first be made before the soft

parts are cut through.

"In the forearm the incision is made over the middle of the ulna and radius on the dorsal side, six centimetres in length. Here the bones are very superficial. In making the incisions the arm should be kept mid-

way between pronation and supination.

"For amputations of the leg the incision is made over the tibia, at the point selected, either on the inner or outer aspect of the crest, and about nine centimetres in length. Neudorfer prefers the outer aspect. The tibia is first cut through with a chisel, then the

fibula is divided either on the same plane or a little higher up. All the other steps are the same as already described, the only difference being that in amputation of the leg and forearm we have two periosteal cavities to obliterate and two skin wounds, respectively, over ulna and radius, or over tibia and fibula."

TREATMENT FOR FRACTURE OF THE RADIUS.

F. Petersen, of Kiel,18 has advocated for the treatment of fracture of the radius of the usual type the following: After the accurate reduction of the deformity the arm is simply supported by a cloth sling so arranged that the hand pronated hangs free over the anterior edge. The arm is supported by the sling to the site of the fracture.

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Reports of Societies.

THE NEW YORK NEUROLOGICAL SOCIETY.

STATED meeting, held at the New York Academy of Medicine, May 1, 1894, Dr. M. Allen Starr, President, in the chair.

Dr. Effertz, of Vienna, presented

A CASE OF HYSTERIA.

The patient was a woman, aged thirty-five, who for the past sixteen years has had a contraction of the fingers and hands of both upper extremities, and complete anesthesia of the face and body. The patient is readily hypnotized, and while in the cataleptic state the contracted hands and fingers relax, on suggestion. While under the influence of hypnotism, the woman invariably presents a double convergent strabismus, which disappears when she is roused. On suggestion, the contractures may be made to disappear temporarily. The anesthesia is always present, but the patient never burns nor injures herself. There is no ataxia. The corneal reflex is present. The patient suffers from hystero-epilepsy, and sometimes goes into a condition of trance spontaneously. With the left eye she is totally blind. With the other eye the visual field is limited, and she does not see certain colors. There is loss of bearing on one side.

18 Centbl. f. Chir., 1894, Bd. xxi, Beilage 93.

DR. W. M. LESZYNSKY said he examined the patient a few days ago, and could corroborate Dr. Effertz's statements regarding the case. It was impossible to test the knee-jerk, as the leg immediately became rigid. She was readily hypnotized, but he had found it very difficult to awaken her.

INTRODUCTION OF THE NEW PRESIDENT.

DR. M. ALLEN STARR, the retiring President of the Society, made a few remarks in which he referred to the success of the Society during the past two years, and its prosperous condition at the present time. Many of the papers presented showed a high grade of excellence and have been important additions to neurology; the discussions, too, brought out many points of great practical value. Dr. Starr then introduced the newly elected President, Dr. E. D. FISHER.

Dr. Fisher, after a few preliminary remarks in which he outlined the proposed work of the Society during the coming year, read a paper on the subject of

THROMBOSIS OF THE CEREBRAL ARTERIES.

He stated that the most common causes of thrombosis of the cerebral arteries are atheroma and syphilitic endarteritis. In atheroma the large vessels at the base are especially involved; but on close examination, the smaller vessels, if traced up beyond the Sylvian fissure, will be found to have rigid walls which have lost their elasticity and are therefore subject to temporary interference with the course of the blood through them. This is particularly seen when Bright's disease is a complication, or indeed, as in most cases, a cause of the degeneration of the arterial walls. In syphilitic endarteritis it is said that the smaller arteries or capillaries are involved to a greater degree than in atheroma. Dr. Fisher said he would confine himself more particularly to the latter condition, associated with Bright's disease, as of late much has been written on the subject of uremic hemiplegia.

The difficulty of diagnosing this condition lies in the attempts to explain the distinct localization, on the basis of uremia as the cause. One might expect a paraplegia from the general effect of the poison on the cerebrum, or a general compression from the edematous condition found in these cases, but not a localized paralysis. Autopsies have been reported, and several such have come under the author's observation, in which distinct hemiplegia has been present, and yet neither hemorrhage nor thrombosis was found to explain it. In most of the cases of uremic hemiplegia reported, disease of the vessels has also existed, although no other lesion, excepting in some cases serous effusion, has been found. Again, at times, no disease of the vessels has been found, but perhaps with no greater frequency than apparently healthy vessels are found in cases of hemorrhage or thrombosis. It is certainly not an uncommon experience, especially is syphilitic endarteritis, to see a hemiplegia entirely clear up, leaving little if any trace, by secondary changes of the previous interference with the cerebral circulation. We find the same condition not infrequently in atheromatous conditions in old people. The most rational explanation seems to be that there is a temporary occlusion or stasis, which in the diseased state of the vessel walls permits a localized serous exudation, so that we might feel justified in returning to the old term of a serous apoplexy.

The commonly accepted indication of thrombosis is

a gradual onset of the paralysis, perhaps extending while the patient is still conscious and able to describe its course. The consciousness may not be affected at all, or it may be progressively affected, passing into complete coma, with stertorous respiration. This implies that a large artery has been involved. The temperature is not lowered at the onset, as a rule, as in hemorrhage; but within twenty-four or forty-eight hours there will probably be an increase of temperature from the softening which follows. The other later stages are not to be differentiated from those due to any other destructive lesion in the brain, excepting perhaps the fact that the paralyzed parts are more frequently the seat of spasmodic movements. The loss of consciousness is explained by the anemia of the brain, and also as a result of the compression. The compression is the result of three causes: There is stasis in the vessel occluded and the veins beyond, as the latter, not receiving the vis à tergo, remain filled; there is also an exudation from the vessels which now acts as a compressive agent. The collateral circulation can hardly be considered as exerting a compression on the affected part. The onset of the thrombosis is usually too gradual for us to consider the question of shock to the brain as a cause of unconsciousness. In later stages of cerebral softening, which is now accepted as non-inflammatory and entirely dependent upon the cutting off of the blood supply, aided by compression from the exuded serum, we not infrequently find hemorrhages in the course of thrombosis, as a result of the loss of the usual support of the healthy tissues to the already diseased vessels. This the author considered to be the explanation of some cases which commence with symptoms diagnostic of thrombosis, but which within one or two days pass into deeper coma, after having perhaps recovered consciousness soon after the initial lesion. Autopsy reveals a hemorrhage probably preceded by thrombosis.

Dr. IRA VAN GIESON read a paper on

HEMORRHAGIC NECROSIS OF THE SPINAL CORD.

The author stated that the subject which he wished to present for consideration was what seemed to him to be an explanation of the nature and origin of certain long, slender columns of necrosis in the spinal cord, apparently associated usually with acute myelitis. These columns of necrosis are very remarkable in that they are narrow and circumscribed, and yet they may traverse long distances of the cord, above or below a circumscribed myelitis, while the surrounding structures of the cord are normal and show no traces of inflammation or other processes which would produce such a necrotic column. For instance, seven or eight spinal segments above or below a circumscribed focus of myelitis may be pierced by a continuous streak or narrow column of necrosis, running either through the gray or white matter, while the segments thus traversed by the necrotic columns are quite normal, with the exception of secondary degeneration in the various fibre tracts of the white matter. In addition, these necrotic columns in the spinal cord show a tendency toward the formation of cavities in them. These cavities are liable to become so much liquified or disintegrated by the necrotic process in places along the distribution of the column, that a cavity or tiny bulbular canal is produced, which is sharply circumscribed and quite variable in extent.

These cases are seemingly of exceedingly rare oc-

The author said he knew of but two published cases, one of which was associated with an acute, circumscribed myelitis of very sudden onset, while the second case followed a myelitis of severe traumatic origin. Both of the cases lived for three or four months after the onset of the myelitis. The first case published was that of Dr. C. L. Dana, in the Atienist and Neurologist, April, 1889, under the title of "Acute Transverse Myelitis, with Perforating Necrosis of the whole Dorsal Cord; Ascending and Descending Degenerations." Dr. Dana excluded bacterial action in the formation of the perforating necrosis, and seemed to be at a loss to determine the origin of the process. The second case was that of the author, which was published in the "Transactions of the New York Pathological Society," 1891, under the title of "A Case of Traumatic Myelitis in the lower Dorsal Region, with a Central Column of Necrosis extending above the lesion throughout the whole Dorsal and Cervical Regions." In this case the necrotic column and canal had no pyogenic or other lining membrane; it was eutirely distinct from syringo-myelia; there were absolutely no signs of inflammation in the surrounding cord structures; and Dr. Van Gieson said he was at a loss to understand the occurrence of so long a necrotic column in the midst of the normal portion of the cord.

Within the past two years, the author said he had had an opportunity of studying two cases of acute myelitis, with hemorrhage, which afforded a very simple explanation of the lesions of perforating necrosis. In brief, this peculiar process seems to be produced primarily by long slender columns of spinal cord hemorrhages, associated occasionally with cases of acute myelitis, chiefly those of violent traumatic origin, with fracture of the spine, so that there is a more or less severe crush or bruise of the cord occurring intra vitam. Then, after a period of several weeks, these columns of hemorrage above or below, or extending both ways from the damaged cord segment, break down, and we have the lesion of perforating necrosis.

Dr. Van Gieson then gave the histories of two cases of traumatic hæmatomyelia which recently came under his observation, and showed the close relationship which they bore to the production of these long columns of necrosis or partly necrotic canals in the spinal cord, which are thus far known as perforating necrosis. In both of these cases there was violent trauma, which fractured the spinal canal and produced a crushing bruise, with disintegration of one or more segments. Both of the patients died within forty-eight hours after the accident, thus allowing the lesions to be studied before the development of any extensive myelitis or necrosis. In the first case the lesion consisted of a disintegration of the cord at the eighth cervical segment, and a hemorrhage in the two segments above and below this, shown especially on the left side of the fluid. cord. In the second case there was a fracture of the eighth cervical vertebra, which produced a crushing bruise of the first and second dorsal segments of the cord. Columnar hemorrhages were found extending upward and downward from the crushed segments.

In the case of perforating necrosis reported by Dr. Dans, there was no history of trauma such as would give rise to these columns as the result of a crushing wound to the cord; but he distinctly states that the myelitis came on so suddenly as to give rise to suspicion of hemorrhage, and he concluded from the clinical history that there actually was a hemorrhage at first.

In concluding his paper, Dr. Van Gieson said he regarded the condition of perforating necrosis as a distinct and individual lesion of the cord, due to a definite series of changes beginning with hemorrhage. To indicate this condition, and to distinguish it from other spinal lesions, Dr. Van Gieson suggested the name hemato-myelo-porus.

DR. STARR said he regarded Dr. Van Gieson's paper as a very valuable contribution to the pathology of the cord. He felt no hesitancy in accepting the explanation given regarding the origin of the condition described as perforating necrosis. There is nothing in the physics of the subject which would militate against such an explanation. The connective tissue covering the cord and holding it in has a decided thickness and consistence; it offers some opposition to the knife in the fresh state; and no matter how extensive the crushing of the cord may be, it is rather rare at an early autopsy to find the connective tissue of the cord actually ruptured. That being the case, it is easy to understand that a hemorrhage in the cord, in taking the course described by Dr. Van Gieson, simply follows the direction of the least resistance to pressure.

Another point of interest was that in the old cases reported by the author of the paper, much of the hemorrhage had been absorbed, leaving cavities behind. Similar cavities are also met with in the brain. This fact, Dr. Starr said, he has seen demonstrated by Meynert. In those cases cavities existed in the lenticular nucleus; they were filled with thin serous fluid, but contained no blood. In one brain there were cavities in both lenticular nuclei. It seems, therefore, that we may have in the brain a condition homologous to that found by Dr. Van Gieson in the cord.

Dr. G. M. Hammond said that while in the recent cases reported by Dr. Van Gieson, the evidence of hemorrhage was very apparent, he wished to ask whether the lesions in the older cases were hemorrhagic, and what the pathological changes were.

Dr. FISHER said that in traumatic cases, the explanation given that the columns of hemorrhage were due to the fact that the blood followed the course of least resistance would hold good: in other cases, however, in which the patient survives perhaps for several months, the perforating columns of necrosis may be due, not to an extension of the hemorrhage at the time of the injury, but to slight capillary hemorrhage, leading to lack of nutrition and softening.

DR. VAN GIESON then closed the discussion. In reply to Dr. Hammond he stated that in the older cases he saw no traces of hemorrhage in the cord lesions; simply a mass of necrosis. After hemorrhage of the brain, the blood may entirely disappear within three or four months, leaving perhaps some pigmentation behind, or simply a small cavity filled with serous fluid.

Recent Literature.

Suicide and Insanity; A Physiological and Sociological Study. By S. A. K. STRAHAN, M.D., Barristerat-Law. Pp. 227. London: Swan, Sonnenschien & Co., 1893.

myelitis came on so suddenly as to give rise to suspicion of hemorrhage, and he concluded from the clinical history that there actually was a hemorrhage at first. In many years, with the exception of Morselli's clas-

sic, and possibly O'Dea's work, both of which were published about fifteen years ago. This is rather surprising when we consider the interest which this subject has for the physician, lawyer, sociologist, theologian and moralist, and the array of recent works on insanity, jurisprudence, heredity, psychology and crime. Morselli's essay was based on a vast collection of statistics, a close and elaborate analysis of which enabled him to confirm and establish certain general laws as to appearance, causes and increase of suicide. Strahan embodies in his work many of these results, and in addition devotes the bulk of the volume to the consideration of the influence of disease and heredity upon the origin and extension of suicide. There are few statistical tables in this work; but barring a tendency to special pleading, the author's argument, whether based on pathological, clinical or historical facts, is interesting, impressive at times, and quite as conclusive as Morselli's. The two books are in a measure complements of each other; and taking them together, we may now obtain a comprehensive survey of the various aspects and relations of suicide, general and individual, and the many questions involved.

The author has made the unique attempt, and a fairly successful one it is, to classify self-destroyers. He divides them into rational or quasi, and irrational or true suicides. In the one class "the reason of the individual is called upon to choose between death and a continuance of life and he selects the former. In the other he is impelled to destroy his life by an innate craving or instinct, by an uncontrollable impulse; or by the unhealthy reasoning of a disord-ered intellect." Artificial as any such arrangement must be, from the fact of the large number of intermediate cases, and for other reasons, it certainly helps to facilitate study of the subject. He calculates that but ten per cent. of all modern suicides, can, after careful examination, be relegated to the rational class, the remaining ninety per cent. being irrational (not necessarily insane) suicides. In his support of his definition of true suicide lies much of the argument and moral of the book. It is shown that suicide is a product of civilization, is immediately hereditary and due to transmission of family degeneration, and that it is one of the many eliminative processes by which Nature rids herself of the unfit. Therefore to the list of degenerates from hereditary transmission, that is, the insane, idiotic, imbecile, criminal, deaf, dumb and blind, he would add, as almost a separate class, true suicides. He cites many illustrative cases and family trees in support of his views. One per cent. is given as the limit of persons of really sound stock who commit suicide; and he asserts "that suicidal impulse, whether the gradually developing or the instantaneous, is but rarely acquired"; it "is inherited from ancestors who have been cultivating it for a considerable time in one form or another."

Regarding the question of the insanity of suicides, the writer holds some rather extreme views. exposes ably the fallacy of the opinion first held by Esquirol and his contemporaries, that no suicide could be sane, and considers it "tolerably certain that but a small minority of our annual total of suicides arises from madness, the greater number being abnormally constituted, but neither deficient nor disordered intelcases of suicidal impulse among the true suicides who ommend the book with pleasure to all students.

are not insane, and denies that in such the suicidal act is an insane one, he is at variance with the prevailing views of all writers of weight on insanity; and his dictum, if accepted, would necessitate a new explanation for all extreme acts due to irresistible impulse. His reasons on page 127, for example, why the individual who seeks pleasure in self-destruction should not be considered insane, apply with equal force to the homicidal sexual pervert. On this point, we think the author tries to prove too much, and in his endeavor to throw into relief this class of degenerates, and thus, perhaps, emphasize his argument, he draws a sharper boundary between insanity and certain suicides than actually exists. Possibly, also, as he is barrister as well as physician, a predilection lingers for the old views so long and tenaciously held by bench and bar, regarding the non-existence of true mental disease in which there is no obvious intellectual impairment, and is therefore sceptical as to the insanity of pure states of deficient control. In other respects it is impossible to criticise the chapter on suicidal impulse. His views, not merely as to the existence but comparative frequency of "pleasurable suicides," will be echoed by most alienists, whose experience of the unabated cheerfulness of certain patients of this impulsive class before suicide is not an uncommon one.

The prosperity and adversity of a country or community, as influencing the rate of suicide; cramming in schools; the greater risk of suicide among women from competition with man; the protection of the unfit; are among the chief remaining points consid-The book closes with a bold but forcible and discriminating argument in favor of the justifiability of suicide under certain circumstances.

If anything written or spoken can by any possibility succeed in inducing people "to use intelligently in the propagation of the human race some of the knowledge, care and forethought so successfully exercised in the breeding of the lower animals," some of the credit to follow should fall to the writer of "Suicide and Insanity."

Text-Book of Anatomy and Physiology for Nurses. Compiled by DIANA CLIFFORD KIMBER, Assistant Superintendent of New York City Training School, etc. Pp. 268. New York: Macmillan & Co. 1894. This is a compilation from the standard authors by one who should know just what and how much is best adapted to the needs of pupils of training schools for nurses. This is no easy task to perform without erring either by excess or by defect. Hence it always offers a fine field for the critic. We prefer not to discuss details but to say simply that the work seems to us well done.

Text-book of Medical and Pharmaceutical Chemistry. By ELIAS H. BARTLEY, B.S., M.D., Professor of Chemistry and Toxicology in Long Island College Hospital, etc. Third edition, revised and enlarged, with 84 illustrations. Philadelphia: P. Blakiston, Son & Co. 1894.

The most important addition to the present edition of this text-book is the chapter on Physiological and Clinical Chemistry, which deals with the chemistry of nutrition, foods, digestion, milk, and the urine.

The author has displayed good judgment in the selectually." When, however, he attempts to class lection and arrangement of his material; and we rec-

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FLECHSIG'S OPIUM-BROMIDE TREATMENT OF EPILEPSY.

EVERY discovery which holds out a promise of new light on the treatment of epilepsy appeals to each member of the profession, for our list of efficient remedies is a short one.

The bromide salts, although they sometimes fail utterly to help, are still our best weapon against this dreadful malady. Of late years it has been found that antipyrine may intensify the action of the bromide. and that borax in large doses can occasionally be substituted for them to advantage, especially for night attacks, or given in combination with them. Zinc oxide, though one of the oldest remedies, deserves more attention than it generally receives; but it is often useless, and cannot always be borne in the large doses that are necessary to check the paroxysms. Nitroglycerine in full doses accomplishes something towards the arrest of the minor seizures, and the dietetic and hygenic management of the patient is of great importance. Much was hoped, yet not much has been realized, from the disinfection of the intestinal tract. Meantime our dispensaries are crowded, one might almost say, with patients who drag out a dulled and anxious existence, often losing color and appetite under the influence of large doses of the bromides, and gradually failing in mental power.

Opium has been used occasionally, and with more or less advantage, for many years; but the method of employing it recently suggested by Flechsig is based on a somewhat new principle, and gives better results than the methods which have preceded it. The value of the treatment does not rest on the power of opium to stop the paroxysms—although it sometimes does stop them—but on its tendency to increase the efficacy of the bromides. Sometimes, also, the mental condition improves when the plan to be detailed has been carefully followed out.

The literature of this subject is well presented in the

preliminary communication by Professor Flechsig; a later pamphlet by his assistant, Dr. Carl Salzburg; and a recent paper by Dr. Joseph Collins, of New York. We learn that the same method has been used with good results in the out-patient department for diseases of the nervous system at the Massachusetts General Hospital.

The treatment as originally described consists in giving opium in doses increased rapidly from two or three grains to fifteen grains, daily, in three portions. The maximum dose should be reached in one or two weeks and continued for six weeks. At the end of this time the opium is suddenly withdrawn, and either a potassium or sodium salt of bromide substituted for it. These are given, at first, in doses of two drachms daily, later in smaller doses, decreased gradually to about forty grains a day.

No great improvement is seen, as a rule, till the moment when the bromide is substituted for the opium, but having appeared, it persists for a number of months at least; furthermore, when the attacks recur, as is likely to happen eventually, they are apt to be much lighter in form than before, while the mental condition, as stated, is sometimes better than it had been.

Dr. Collins's experience covers some fifty cases, many of which were under careful observation at the Almshouse Hospital for more than a year.

Unfortunately, the treatment has its shady side, as might have been anticipated. The danger of inducing the opium habit has not as yet shown itself, to be sure, as a real one, and can be guarded against to a great extent. On the other hand, the large doses which are said to be necessary are sometimes ill borne, and the first few days after the opium is withdrawn are apt to be trying ones for both patient and doctor, though, as a rule, nothing serious happens, and the patients are able to continue their attendance at the dispensary or office. Sometimes a few doses of morphine have to be given at this period.

The unfavorable symptoms most commonly met with are loss of appetite, and vomiting, constipation or diarrhea, pains, extreme drowsiness or insomnia; but toxic hallucinations and delirium may occur, and sometimes even collapse, with feeble pulse. Yet who is there that has not seen cases where these and greater risks would gladly have been encountered for a fair chance of considerable gain?

Fortunately, it is the inveterate cases for which this method works best; and it is specifically advised that it should not be used in conditions of (1) status epilepticus, (2) plethora, or (3) where organic disease of the brain is present.

Finally, it is believed that the beneficial effects of the alternating opium-bromide method may be continued by an occasional repetition of the treatment; and, where the opium is not well borne these repetitions might, perhaps, be made more frequent, and the maxi-

Neurologisches Centralblatt, 1893, No. 7.
 Uber die Behandlung der Epilepsie, insbesondere mit Opium Broin., Leipsig, May, 1894.
 New York Medical Record, September 22, 1894.

mum dose of opium smaller than usual. It remains to be seen whether opium is capable of increasing the efficacy of other remedies beside bromide, such for instance as borax. On Salzburg's theory, which is that the opium exerts its favorable action simply by increasing the relative blood-supply and hence the relative bromide-supply to the brain, it would seem not impossible that this might occur.

We shall look with interest for further reports, and need only remind our readers again that it is with the inveterate cases, where the other treatments have been tried without success, that they should make their experiments.

ON IMMEDIATE SURGICAL INTERFERENCE IN CASES OF PERFORATION OF THE STOMACH BY ULCER.

UNDER the above caption, Michaux, of Paris, reported to the Eighth French Congress of Surgery, October 10, 1894, the details of an operation performed by him September 25, 1894, whereby the life of a patient was rescued from peritonitis and death. The cause was perforative ulcer; the patient, a robust man, aged thirty-one years. The symptoms on admission to Beaujon hospital were those of peritonitis rapidly extending. The history was clearly that of round ulcer.

On opening the abdomen, Dr. Michaux discovered a small linear perforation high up on the anterior surface of the stomach, very near the cardia. At each respiratory movement a leakage of fluid from the stomach took place from this orifice.

The abdomen was washed out with boiled water, and large antiseptic sponges were placed, for protection, in the lower part of the abdomen. The surgeon endeavored to suture the borders of the perforation, but the silk threads tore through, on account of friability of the tissues. The high, inaccessible situation of the ulcer rendered excision impossible. As a somewhat desperate experiment, Michaux made a fold of the front wall of the stomach by which the perforation was completely buried; the ulcer was fixed in the bottom of this fold by a double row of Lembert silk sutures; the first row extended beyond the ulcer which could be seen, and which had the dimensions of a five franc piece. The wound was left open, an iodoform-gauze tent being inserted for drainage.

The patient was fed by the rectum for a long time; the gauze pledget was left in for eight days. A purulent fistula remained for six months; it then healed and the patient was reported as perfectly well and able to work.

Michaux remarks that perforation is a frequent complication of ulcer (thirteen per ceut.), and often takes place when the ulcer is on the anterior wall, near the cardia. The signs by which perforation is recognized are: agonizing epigastric pain, a sensation of burning and of rending, increased by ingestion of food and drink; retraction of the belly; vomiting infrequent or nil; in fine, signs of peritonitis with ele-

vation of temperature, or collapse with hypothermia, tympanitic distention, etc.

Mikulicz, in 1884, was the first to operate for peritonitis, caused by perforation of round ulcer. Since then the operation has been performed by Steinthal, Nissen, Körte, Czerny, Stelzner, Kriege, in Germany; by Hastings, Gilford, Howard, Lee, Dickenson, Morse and Maclaren, in England; by Roux, Poucet, Walther, LaDentu, Michaux and others, in France.

Michaux's statistics of the operation done under such circumstances comprise twenty-five cases in all; the first ten were fatal; of the following fifteen, there were five recoveries and ten deaths. Kriege, of Berlin, had the first successful case; those of Morse, Maclaren, Roux and Michaux were also successful. The operation should be done early to be of any effect. Michaux emphasizes the importance of a very early operation — certainly within the first fifteen hours — and of a very free incision, with subsequent free drainage.

RESURRECTION AFTER ELECTROCUTION.

It is announced from New York that Dr. P. J. Gibbons, of Syracuse, has received permission from Governor Flower to make the attempt to resuscitate a convicted murderer by the name of Wilson (who has been sentenced to execution at Auburn State-prison next week) after the electrical current has been applied.

Dr. Gibbons claims that electricity, as it is now employed in the State of New York for the execution of criminals, does not really produce death, but only a state of suspended animation, and that in most of those who have suffered capital punishment since the new law went into effect have in reality been killed by the autopsies which followed the application of electricity. He believes that artificial respiration, efficiently carried out, will cause the resuscitation of a subject who has undergone the electrical chair, and he has invented a special apparatus for producing artificial respiration, which he designs to use on this occasion.

It is understood that the Governor will commute the prisoner's sentence to life imprisonment at a moment which will entail the arrival of the papers after the electrocution has taken place. Then, if the man is restored to consciousness it will not be necessary to subject him again to the electrical chair; while if the attempt is unsuccessful the papers will have arrived too late to save his life.

Dr. Gibbons claims to have partially resuscitated murderer John Johnson after his electrocution at Auburn prison, when he was peremptorily ordered by the Warden to desist, and the body was sent to the autopsy table. This, he states, was no less than two hours after the current had been applied, and the experiment was made without the apparatus which he now proposes to try. Even if the man should be revived Dr Gibbons does not think it will be necessary to change the present law in regard to the death pen-

alty, as he is of the opinion that the continuous current, if applied in sufficient quantity, will cause death-

Dr. Gibbons seems desirous of putting himself in the way of furnishing a veritable pendant to Conan Doyle's story of the "Los Amigos Fiasco."

THE ANTITOXIN OF DIPHTHERIA.

As far as there is anything to add to the information recently given in the JOURNAL (September 20th and 27th) in regard to the antitoxin treatment of diphtheria, it is confirmatory of the value of that treatment. Scattered cases, as reported by a variety of observers, coincide with the hospital reports coming from Europe. The small available supplies of the antitoxin, the difficulty and expense in obtaining it, have been an impediment to its use in this country. At the Boston City Hospital, where there are always a large number of cases of diphtheria, many of them in an advanced and serious stage of the disease, it has been hitherto impossible for the above reasons to make use of this treatment to any extent.

There would seem to be no insuperable difficulty about the preparation of the antitoxic serum here at home, given the time and money. It could probably be best undertaken by State or municipal boards of health. In New York and Chicago a beginning has been made; and it is to be hoped that other cities will see their way to making this promising treatment available as promptly as possible.

MEDICAL NOTES.

THE MOXON MEDAL OF THE ROYAL COLLEGE OF PHYSICIANS. — The Moxon Medal of the Royal College of Physicians, for distinguished services in clinical medicine, has been awarded to Sir William Jenner.

THE ALVARENGA PRIZE OF THE COLLEGE OF PHYSICIANS OF PHILADELPHIA. — The Alvarenga Prize for 1894 has been awarded to Dr. G. E. De-Schweinitz, for an essay entitled "The Toxic Amblyopias: their Pathology and Treatment."

BERI-BERI AT PERTH AMBOY, N. J. - The barkentine Robert S. Patterson, arrived at Perth Amboy, N. J., November 11th, and sent ashore for medical assistance, reporting several cases of beri-beri on board. Three cases had died on the voyage from Navassa, the disease having broken out soon after leaving that port.

Dr. Zacharin's Future. - Dr. Zacharin, the eccentric Russian physician who attended the Czar Alexander III during the greater part of his illness, has not a very cheerful future to look forward to. The present Czar Nicholas is said to be so displeased with Dr. Zacharin's conduct that he has suggested that he confine his practice henceforth to Siberia.

Indian Medical Congress. — The First Indian Medical Congress will be held in Calcutta from the 24th to the 29th December, 1894. The objects of the meeting of the Vermont State Medical Society at

Congress are to bring together medical men from all parts of the Indian Empire, to discuss medical subjects connected with Indian diseases, and to place on permanent record some of the work which is now lost to science for want of proper publication. This Congress will afford an opportunity, never before presented, for medical men, who are in isolated but important positions in the different Provinces of the Indian Empire, meeting and comparing notes with their fellow-workers on subjects of mutual interest. The work of the Congress will be divided into the following sections: Medicine and Pathology; Surgery, including Ophthalmology; Obstetrics, and Diseases of Women and Children; Public Health; Medico-Legal Medicine and Insanity; Pharmacology, specially Indigenous Drugs. Although the Congress is primarily an Indian one, a cordial invitation is extended to medical men in other countries.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. - During the week ending at noon, November 14, 1894, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 104, scarlet fever 81, measles 31, typhoid fever 30.

THE HORACE MANN SCHOOL FOR THE DEAF .-The Horace Mann School for the Deaf celebrated the twenty-fifth anniversary of its foundation on November 10th. There are at present one hundred and seventy pupils in the school.

THE WOBURN (MASS.) SCHOOLS REOPENED. -The Woburn, Mass., schools which have been closed on account of the prevalence of scarlet fever were reopened on November 12th, the Board of Health considering the epidemic to be sufficiently controlled.

A Bequest to the Cambridge (Mass.) Hos-PITAL. — The will of the late Susan E. W. Brackett, of Cambridge, Mass., bequeaths ten thousand dollars to the Cambridge Hospital. The Cambridge Home for Aged People likewise receives ten thousand dollars and the Avon Home, Cambridge, five thousand dollars.

THE TYPHOID-FEVER EPIDEMIC AT WESLEYAN University. — Oysters on the half-shell are now accused of causing the outbreak of typhoid fever at Wesleyan University, and the old college pump has been exonerated.

THE SPREADING OF SCARLET FEVER. — The State Board of Health of Maine gives an excellent example, in its October publication, of some of the causes for the spreading of scarlet fever which under proper control could be avoided. "In Columbia in 1892, there were eight cases of scarlet fever, 'too mild to report to the local board,' so the doctor said. In 1893 there were twenty-seven cases of the same disease in the same town.'

VERMONT STATE MEDICAL SOCIETY. - The following officers for the ensuing year were elected at the Montpelier October 11th. President, Dr. J. H. Linsley, of Burlington; Vice-President, Dr. F. F. Chaffee, of Stratford; Secretary, Dr. D. C. Hawley, of Burlington; Executive Committee: Drs. J. H. Lensley, D. C. Hawley, and F. R. Stoddard, of Shelburne.

THE NEW ENGLAND DENTAL SOCIETY. — The annual meeting of the New England Dental Society was held in Boston on November 15th and 16th. The following officers were elected for the ensuing year: President, James H. Daly, D.D.S., of Boston; First Vice-President, Dwight M. Clapp, D.M.D., of Boston; Second Vice-President, Cyrus H. Hayward, D.D.S., of Peterboro, N. H.; Secretary, Edgar O. Kinsman, D.D.S., of Cambridge; Assistant Secretary, Marion L. Woodward, D.D.S., of Boston; Treasurer, George R. Young, D.D.S., of Concord, N. H.; Librarian, Joseph King Knight, D.D.S., of Hyde Park; Executive Committee, W. E. Page, D.M.D., of Boston; George H. Maxfield, D.D.S., of Holyoke; Dr. C. H. Gerrish of Exeter, N. H.; Dr. H. F. Libby of Boston, and A. W. Howland, D.D.S., of Boston.

NEW YORK.

DR. TIMOTHY M. INGRAHAM, one of the best known physicians in the suburbs of Brooklyn, died at his home in Flatbush on November 4th, of cerebral apoplexy. He was born in Amenia, Dutchess County, in 1821. He received his collegiate education at Wesleyan University, Middletown, Conn., and the degree of M.D. from the Vermont Medical College, in 1847. After graduating he became assistant to Dr. J. L. Zabriskie, Superintendent of the Kings County Hospital, in Flatbush. In 1848 the latter died of typhus fever, and Dr. Ingraham succeeded to his private practice. During the war he served for a time as a surgeon in the army, but a long attack of illness compelled him to resign.

Miscellanp.

A FATAL CASE OF LABORATORY CHOLERA.

On the 21st of September of this year, Dr. Karl Emil Oergel died in Hamburg of Asiatic cholera, contracted during laboratory investigation at the Hygienic Institute. The circumstances of his illness were such that careful observation of symptoms were possible throughout the course of the disease; Dr. Reincke has published an account of the case which is interesting from clinical as well as personal reasons.

The exact manner of infection was not discovered, but it was beyond doubt some oversight in his laboratory work, as all other possible means were eliminated and several breaks in the chain of precaution were discovered.

On the 14th of September Dr. Oergel was at his work, and made no complaint, nor was his appearance different from usual, although it was subsequently learned that he had on that day diarrhea and some lassitude. In the evening the diarrhea became much

¹ Deutsche Med. Woch., No. 41, 1894.

worse and was accompanied by vomiting, cramps and great restlessness, and the patient fell into a state of collapse, with small, slightly quickened pulse, and presented the appearance of a much asphyxiated case of cholera. He was moved early on the morning of the 15th to the Eppendorfer Hospital, where he rallied after many injections of camphor and ether. His condition was recorded as follows:

"Typical picture of severe cholera. Patient is hardly to be recognized. The eyes deeply sunken, and half covered by the lids. Moderate cyanosis. Hands and feet cold. Folds in the skin remain as made. Sensorium entirely free. Temperature 35.4°C. Pulse 100. Breathing irregular. A sense of heavy oppression. As far as the condition permitted examination, no evidence of change in internal organs was detected. There were many ricewater stools within short intervals, and all drinks and medicines were quickly vomited. Marked singultus. Restless tossing about in bed. Cramps in thighs, forearms and feet. Treatment ordered: Camphor injections and warm baths."

During the day the temperature rose to 36.9° C., and the pulse became very small, and was obtainable only at intervals. There was considerable vomiting and almost incessant singultus. By evening the cramps increased in severity and frequency, and were the cause of the chief complaint of the patient. During the day an injection of three and one-half litres of a warm one-per-cent. solution of tannin was given, and retained about twenty minutes. At night he was given an infusion of 900 c.cm of 0.66 per cent. solution of salt at a temperature of 40° C. After this the subjective condition was slightly improved and the cramps lessened. The pulse was obtainable throughout the night.

During the next five days the condition remained about the same, there being some vomiting, offensive stools and a gradually approaching state of coma. There was a constant tendency to collapse, and death occurred in deep coma on the afternoon of the 21st of September.

Daily bacteriological examination of the stools showed nearly pure culture of the cholera vibrio, with occasional admixtures of a few bacteria coli. The autopsy showed a fibrinous pneumonia of both lower lobes, especially of the right; old aortic endocarditis; "cholera kidney," second stage; cicatrices of the left kidney, a recently swollen liver; proctitis, and diphtheritic colitis.

Correspondence.

OLDTOWN GYNECOLOGICAL REMINISCENCES.

OLDTOWN, November 1, 1894.

MR. EDITOR: — I send you an abstract, the animam of a paper which I read recently to the members of our Oldtown Medical Club. My fellow physicians expressed not a little interest in it, and I thought possibly some of your readers may find in it a germ for reflection.

I listened last winter to a paper and discussion on "Erosions of the Os Uteri." The paper was afterwards published. The most which I could learn was that, hy some of the speakers, erosions were considered of but little consequence, while by others they were looked upon as cancers in disguise, to be dealt with by fire and steel (or steal?) The only idea which I brought away was, "May the Lord have mercy on the poor innocent victims of the lesion."

Some recollections of what I have seen occur to me.

I saw my first cases of erosions of the os uteri, as a student, in Paris, I think at the Hopital St. Louis. They were under the care of M. Jobert. Whatever one might think of the treatment, he could not but admire the dexterity of the operator. An interne stood on each side of the operating table, ready to seize the patient by the ankle the instant she mounted. With a dexterous twist, such as Dr. Bigelow gave his patients in reducing a dislocation of the hip, the whole field of operation was exposed to the view of the students in the amphitheatre, a speculum introduced before the woman had time to draw a breath, and the hot iron having been applied to the os, she left to make room for another. About a dozen of these burnt offerings were laid on the altar of Science of a morning. What was the result I never knew.

I do not recollect in just what year the uterine epidemic broke out in Boston and vicinity, but I think somewhere about 1850. Some articles appeared about that time in the Lancet, written by Dr. Bennett, of London, which attracted a good deal of notice from some of our Boston physicians. I recollect one of them saying to me that it was reading these articles which induced him to look up some old obscure cases in his "best families," meaning by this his rich families, for I believe that the disease is rarely found among poor patients. This gentleman afterwards became quite celebrated as a specialist in uterine disease.

The form in which the uterine epidemic was first seen was as ulceration of the os, sometimes called erosion. One peculiarity was the great variety of symptoms to which it gave rise. In fact nearly everything not due to some obvious lesion elsewhere could be traced to this insidious dis-Amenorrhea, dysmenorrhea, leucorrhea, menorrhagia, headache, backache, constipation, diarrhea, dyspepsia, defective vision, nervous exhaustion, mental disorders, sore throat and many other symptoms too numerous to mention, all found here their explanation.

The treatment was quite simple: nitrate of silver locally

applied, twice a week, to be continued indefinitely.

The diagnosis was so easily made and the treatment so simple that the general practitioner soon became a pro-ficient, when this form of the epidemic disappeared and hypertrophy of the neck of the uterus took its place. For this a more energetic treatment was found to be necessary, namely, it was "melted down" with caustic potash. This soon gave way to intra-uterine inflammation and scarifica-

Not much has been heard of these three forms of uterine disease for many years until lately, but the elders of the profession can recollect when nearly every obscure affection in a well-to-do woman (for it was observed that the laboring classes, who were obliged to work for a living and thus took sufficient exercise, were rarely affected) would be

traced to one of these causes.

One great advantage of the prevailing epidemic was the ease with which a diagnosis could be made. I recollect that once at an annual meeting of the Massachusetts Medical Society I met an old friend, a former fellow-student. He told me that he had brought with him, from the country town where he was practising, a young lady who had obscure uterine symptoms, to consult Dr. — (naming a distinguished gynecologist). I said, "I do not know what your patient's symptoms are, but I can tell you what will be the diagnosis." "What do you mean?" said he. "I mean what I say," I replied, "the diagnosis will be hypertrophy of the neck of the uterus, and the treatment, caustic potash." I met him the next day, when he said, "You were correct in your diagnosis." Now, since the abdominal cavity can be explored with comparative impunity the

cause of obscure symptoms is looked for higher.

Some cases which I have seen come to my mind at this

A middle-aged woman who had missed her catamenial periods for several months had hemorrhage. Under appropriate treatment it ceased, to reappear irregularly. consultation with a distinguished gynecologist being called

the os uteri (which, by the way, I could not see), and advised me to apply nitrate of silver every fifth day. I applied it twice myself, when the ulceration disappeared (if, indeed, it had ever appeared). After a time the hemorrhage ceased, never to return; the woman is now living at an advanced age in the enjoyment of good health, thus confirming the diagnosis and the wisdom of the treatment.

I was called to a young lady, twenty-six years of age. I was told that she had been going some little distance from home, two or three times a week, to be treated for ulcerstion of the os, by the application of nitrate of silver by a specialist. As her general health was suffering, she had been advised to stay at home and be treated by her physician, until she was able to resume the visits to the specialist and have the ulceration cured. She was quite weak, being unable to leave her room for some little time. With rest and some simple general treatment, it was not a long time, so effectual had been the treatment of the alcer be fore, it happened that when I examined her no trace of a could be found. She continued quite well as long as the was under my observation (something like fifteen year). I then lost sight of her, but heard that she was again under treatment for uterine disease; and the last I had heard of her when this paper was written was as a confirmed invalid. One part of her history I have not mentioned. This young lady had been disappointed in love, and took it very hardly. Had the patient been a man, other interests would have occupied the mind, but being a woman her resources for occupation were limited. A woman in her situation gener ally takes either to church affairs, some fad of the day, or the study of her health. This young lady happened to see a book called "Small's Medical Light-house," in which her symptoms were so accurately described and the diagnosis so confidently made, that she at once put herself under treatment.

A woman, the mother of several children, felt weight in the pubic region and had slight hemorrhage. Depth of uterine cavity, three inches. A distinguished gynecologist who saw her, diagnosed hypertrophy of the neck of the uterus, and was kind enough to show me, in the presence of the patient, how I could make myself sure of the correctness of his opinion. He then cauterized the os very freely. The next day there was free hemorrhage, and something that looked very much like a placenta was discharged from

Another case of intra-uterine inflammation. Mrs. middle-aged, has borne two children. First one died in birth. Has for some years past been the subject of strange nervous symptoms. Lately, catamenia having stopped, she believes herself to be pregnant, as she felt motion (she says). Refused examination at first; but later she allowed me to examine the abdomen externally, when I was convinced that she was mistaken. Being much perplexed, I sent her to a distinguished Boston gynecologist, who wrote to me that the diagnosis was intra uterine inflammation, the pathognomonic symptom, a patulous os, having been found by him. Much to my relief, this lady left me to put herself under the care of a brother practitioner, who found himself as much in the dark as I had been. Soon after this a near friend, who often gives me wise counsel, said to me, "Did it ever occur to you to account for Mrs. ——'s symp toms on other than pathological grounds? Her father had his moral infirmities." I thought I saw daylight. I gave my brother physician the hint. He would never tell me whether he used it, but I do know that Mrs. ter, and I believe that her improvement was due to moral treatment.

I have cited these cases, not because they are of unusual interest, but because they illustrate how one is apt to find what he looks for. At one time it seemed as if the esthesiometer would take the place of the speculum in the investigation of obscure disease, but, for some reason, it did not

seem to be so satisfactory.
In the New York Medical Record of January 14, 1888, I noticed the following: "The fact that certain women develop a kind of mania for uterine treatment is well known. for, he showed me, through his speculum, an ulceration of These cases haunt the dispensaries or pursue the physician in his office. They are never content unless a vaginal examination is made, and the topical application of iodine to the cervix is to them what a 'nip' is to the confirmed They possess a kind of inebriety for local treat-The condition is sometimes due to a morbid sexual erethism, but oftener perhaps to a purely mental disorder and belongs to the 'habits.' The French call it Folia gynecologique, and the Germans Mutterleibkrankheitwahn-It is evidently a disorder coextensive with, and also the product of, modern gynecology. In the West, these cases, as we learn from the *Medical Age*, go by the name of 'womb-cranks.' They are utilized by clinical teachers, and made victims of by dishonest physicians. What they need is isolation from the doctor."

I would not imply in what I have said, that uterine disease is a myth, or that gynecology is a humbug. But we all know that old story of the oculist who spoiled a hatful of eyes while learning to operate for cataract; and I am afraid that the gynecologist has not yet done slaughtering his innocents, and will not be until the subject is treated on broader grounds than at present. We know, indeed, what an important part the reproductive organs take in a wo-man's life; but it is to be remembered that the woman has a stomach and kidneys, a liver and a brain, as well as a uterus and ovaries, and also a moral and intellectual nature which is too often ignored by a sensual husband.

In discussing the subject of women's rights, the unjust relations of married life ought to come in for a large share of notice; but, unfortunately, it cannot, for obvious reasons, be treated of in works designed for general reading. It is considered a reproach to say of a man, that he makes a beast of himself; but if, in his sexual relations, he would take some lessons of the beasts, there would be less need of uterine treatment.

We sometimes pick up useful hints in therapeutics outside the professional circle. At a meeting of a certain sewing-society in a country town in the western part of the State, the case of a farmer's wife came up for consideration. She had for a long time been in feeble health, and the question arose what to do for her, when one wise old matron suggested that if her husband could be kept tied back of the barn with the other bull all would soon be right.

Fully realizing the advances which have been made in the study of uterine pathology, and the other work which has been done in that line by many illustrious men, a great deal of gynecological practice makes one think of the "Story of Chicken Little Illustrated," a very suggestive little book, which I recommend to the members of this club as worthy a place in their libraries.

Yours truly. "1846."

A BON-MOT OF DR. HOLMES.

JAMAICA PLAIN, November 7, 1894.

MR. EDITOR: - A bon-mot made by Dr. Holmes at the time one of his sons was born, was lately written out for me by a physician who was a student at the time; and, as it is as good as all Holmes's sayings were, and I think has never been in print, I thought it might appear in the JOURNAL. I give it verbatim, as it was sent me.

"In the forties Dr. Holmes was one of the instructors in what was known as the Tremont Medical School, which gave instruction to quite a large number of students between the lecture terms of the Harvard Medical School. Usually prompt, we were one day surprised by his nonappearance at the beginning of the lecture-hour, but we waited. Finally, he entered the room hurriedly, glanced around with a smile, and said, 'Gentlemen, I know I am late, but there is a little stranger at my house.' And then with an expression such as only Holmes's face could assume, he continued, 'Now can any one of you tell me what well-known business firm in Boston he is like?' There was no answer: 'He is Little and Brown,' said the doctor, with a twinkle in his eye." Sincerely yours,

ARTHUR P. PERRY, M.D.

METEOROLOGICAL RECORD.

For the week ending November 3d, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:-

	Baro- meter						ve ty.	Dire of w		Vek of w		We'	inches	
Dafe.	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	R.00 A. M.	8.00 P. M.	Reinfell in in
S28 M29 T30 W31 T 1 F 2 S 3	30.09 30.22 29.81 30.07 30.26	52 52 48 56 52 54 58	57 58 51 63 59 64 66	46 47 46 48 41 45 49	76 81 84 100 72 69 80	72 97 91	78 76 90 95 67 71 74	N.E. N.E. S.W. W.	S.E. N.E. E. S.W. S.W. S.W.	3 11 16 11 13 7 14	6 15 12 15 16 12 19	C.O.O.	C.C.R.C.O.C.C.	
	30.05		59	46	_		79					一		1.0

*O., cloudy: C., clear: F., fair: G., fog: H., hazy: S., smoky: R., rain: T., threat ning: N., snow. † Indicates trace of rainfall ** Mean for week

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, NOVEMBER 3, 1894.

	ia	tb	der years.	Per	cen ta g	e of de	aths f	rom
Cities.	Estimated population.	Reported death in each.	Deaths under five yes	Infectious diseases.	Consump- tion.	Diarrhosal diseases.	Typbold fever.	Diphtheria and eroup.
New York	1,956,000	636	208	12,90	13.95	3.00	2.10	5.10
Chicago	1,600,000	_	} - '	_	_	_		-
Philadelphia .	1,139,457	367	118	14.85	7.83	1.62	1.08	11.34
Brooklyn	1,013,000	325	ಶಿಕ	19.78	13.64	4.03	1.65	12.40
St. Louis	540,800	l —	_	_	-		l . 	
Boston	501,107	218	85	18.40	11.96	1.84	1.84	13.80
Baltimore	500,000		1			0.45	4.80	-=
Washington .	285,000	125	44	82.00	13.60	2.40	4.80	3.20
Cincinnati	325,000	1	==		=	1.40	4.20	. ==
Cleveland		143	54	19.60	11.90		4.17	8.50
Pittsburg	272,000	72	28	15.29	1.39	5.56	4.11	5.56
Milwaukee	265,000	82	7	16.66	3.13	_	3.13	9.89
Nashville .	87,754	02		10.00	8.13	_	3.10	9.59
Charleston		=	_	_	_		_	_
Portland	40,000	25	11	16.00	12.00	4.00	_	8.00
Worcester		31	9	9.69	22.61	3.23	3.23	8.28
Fall River	92,233 90,613	21	10	4.76	4.76	4.76	0	8.20
Lowell	70 607	28	ii	17.85	7.14	3.57	3.57	10.51
	65 193	l ii	3	18.18	18.18		_	9.09
Lynn Springfield	50,284	13	3	30.76	15.88	—	7.69	7.69
Lawrence	49,900	_	_	-		l –	-	
N D. 141	47 711	17	7	11.76	5.88	11.76	l —	_
Holyoke	43,848	12	6	_	16.66	_	l –	_
11	33,939	8	_	12.50	_	12.50	_	-
Salem	92 155	9	6	22,22	11.11	I –	=	11.11
Haverhill	20,008	6	1	_	_	l —	–	I —
Malden	30,209	4	1	_	_	=	_	-
Chelses	29,806	14	5	21.42	21.42	-	-	14.28
Fitchburg	29,383	3	1	l —	_	-	_	-
Newton	28,837	8	2	25.00	-	-	25.00	-
Gloucester .	27,293	1 -	l —			-	-	_
Taunton	26,954	13	4	80.76	7.69	-	-	30.76
Waltham	22,068	4	1	25.00	25.00	-	-	25.00
Quincy	19,642	4	0		25.00	33.33	33.33	-
Pittafield	18,802	3	2	66.66	33.33	33.38	33.33	-
Everett ,	16,585	2	0	20 00		_	_	
Northampton	16,331	8	0	33.33	38.33	25.00	_	83.83
Newburyport .	14,073	4	0	25.0∪	25.00	ZD.00	-	-
Amesbury	10,920	_	_					

Deaths reported 2,248: under five years of age 744; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 346, acute lung diseases 257, consumption 251, diphtheria and croup 184, diarrheal diseases 63, typhoid fever 54, scarlet fever 27, whooping-cough 11, cerebro-spinal meningitis 7, malarial fever 2 measles 3 email. pox 2

whooping-cough 11, cerebro-spinal meningitis 7, malarial fever 3, measles 3, small-pox 3.

From scarlet fever Cleveland 14, New York 7, Philadelphia, Boston, Washington, Providence, Somerville and Springfield 1 each.

From whooping-cough New York, Philadelphia and Brooklyn 2 each, Washington, Cleveland, Nashville, Springfield and Salem 1 each.

From cerebro-spinal meningitis New York 2, Washington, Worcester, Lynn, Somerville and Chelsea 1 each.

From malarial fever New York 2.

From small-pox New York 2, Washington 1.

In the thirty-three greater towns of England and Wales with

an estimated population of 10,458,442, for the week ending October 27th, the death-rate was 18.5. Deaths reported 3,714; acute diseases of the respiratory organs (London) 329, diarrhea 94, measles 90, diphtheria 79, fever 46, scarlet fever 41, whooping-cough 37, small-pox (Liverpool 3, Birmingham 2, Manchester

1) 6.

The death-rate ranged from 10.2 in Croydon to 26.8 in Sunderland; Birmingham 16.2, Bradford 15.1, Cardiff 13.7, Huddersfield 19.1, Leeds 20.7, Leicester 12.6, Liverpool 24.2, London 17.8, Manchester 23.4, Newcastle-on-Tyne 19.4, Nottingham 20.5, Plymouth 20.2, Sheffield 16.5.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT. U. S. ARMY, FROM NOVEMBER 3, 1894, TO NOVEMBER 9, 1894.

CAPTAIN WALTER W. B. FISHER, assistant surgeon, will be relieved from duty at Fort Columbus. New York Harbor, upon the expiration of present leave of absence and will report for duty at Fort Meade, South Dakota, to relieve CAPTAIN NORTON STRONG, assistant surgeon.

CAPTAIN STRONG, on being relieved by CAPTAIN FISHER, is ordered to Fort Sheridan, Illinois, for duty at that post, relieving FIRST-LIEUT. GEORGE J. NEWGARDEN, assistant surgeon.

FIRST-LIEUT. NEWGARDEN, on being relieved by CAPTAIN STRONG, is ordered to Fort Wayne, Michigan, for duty.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NO-VEMBER 10, 1894.

F. J. B. CORDEIRO, passed assistant surgesn, from the U. S. S. "Adams," home, and granted two months' leave.

L. H. STONE, assistant surgeon, ordered for examination preliminary to promotion.

J. H. CLARKE, medical director; C. H. WHITE, medical inspector; T. H. STREETS, surgeon; A. C. H. RUSSELL, passed assistant surgeon, ordered as a Board at Naval Laboratory, Brooklyn, N. Y., to examine candidates for admission to the Medical Corps of the Navy and for promotion in the Corps.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE SIX WEEKS ENDING NOVEMBER 3, 1894.

BAILHACHE, P. H., surgeon. To report at Bureau for special temporary duty. October 25, 1894.

PURVIANCE, GEORGE, surgeon. Granted leave of absence for five days each. October 2 and 29, 1884.

HUTTON, W. H. H., surgeon. To proceed to Gulf Quarantine Station for temporary duty. October 24, 1894.

SAWTELLE, H. W., surgeon. When relieved from duty at Boston, Mass, to proceed to New Orleans, La., for duty. October 26, 1894.

Gassaway, J. M., surgeon. When relieved from duty at New Orleans, La., to proceed to Cairo, Ill. October 27, 1894.

IRWIN, FAIRFAX, surgeon. To report at Bureau. October 19, 1894.

MEAD, F. W., surgeon. To proceed to New York, N. Y., for temporary duty. September 24, 1894.

Banks, C. E., passed assistant surgeon. To proceed to Bath, Me., as inspector. October 20, 1894. Granted leave of absence for three days. November 3, 1894.

PECKHAM, C. T., passed assistant surgeon. Gabsence for twenty-two days. October 16, 1894. Granted leave of

GLENNAN, A. H., passed assistant surgeon. Granted leave of absence for two days. September 29, 1894. Granted leave of absence for three days. October 21, 1894.

BROOKS, S. D., passed assistant surgeon. Saginaw, Mich., as inspector. October 20, 1894. To proceed to

McIntosh, W. P., passed assistant surgeon. Granted leave of absence. October 9, 1894.

GEDDINGS, H. D., passed assistant surgeon. Detailed for special duty to assist the health authorities, District of Columbia. October 27, 1894.

GARDNER, C. H., assistant surgeon. To proceed to Angel Island Quarantine Station for temporary duty. October 13, 1894.

NYDEGGER, J. A., assistant surgeon. Granted leave of absence for eighteen days. September 24, 1894. Leave of absence extended three days. October 17, 1894.

STEWART, W. J. S., assistant surgeon. To proceed to Alexandria, Va., as inspector. October 10, 1894. To proceed to Glymont, Md., for special duty. October 29, 1894.

STRAYER, EDGAR, assistant surgeon. Granted leave of absece for fourteen days. October 24, 1894.

BLUE, RUPERT, assistant surgeon. Granted leave of absence for three days. November 3, 1894.

NORMAN, SEATON, assistant surgeon. To proceed to New York, N. Y., for temporary duty. October 25, 1894. To rejoin station, Baltimore, Md. November 2, 1894.

SPRAGUE, E. K., assistant surgeon. Granted leave of absence for thirty days. October 10, 1894. When relieved from duty at Cairo, Ill., to proceed to Mobile, Ala., for duty. October 29,

Thomas, A. R., assistant surgeon. To proceed to Cairo, Ill., for temporary duty. October 5, 1894.

GREENE, J. B., assistant surgeon. To proceed to New York, N. Y., for duty. October 27, 1894.

JOSEPH B. GREENE, of Alabama. Commissioned by the President as an assistant surgeon. October 24, 1894.

SOCIETY NOTICE.

SUFFOLK DISTRICT MEDICAL SOCIETY. - The Section for

SUFFOLK DISTRICT MEDICAL SOCIETY. - The Section for Clinical Medicine, Pathology and Hygiene will hold its regular monthly meeting at 19 Boylston Place, on Wednesday evening, November 21st, at 7.45 o'clock.

Papers: Drs. S. Breck and C. G. Cumston, "Report of a Case of Purulent Pleurisy and Pericarditis in a Child aged Sixteen Days, with remarks."

Dr. Morton Prince, "Traumatism as a Cause of Locomotor Ataxia, Considered Especially from a Medico-Legal Aspect, with a Report of Three New Alleged Cases." Discussion by Drs. P. C. Knapp, J. J. Putnam, G. L. Walton, W. N. Bullard, E. H. Bradford and A. H. Nichols.

JOHN L. AMES, M.D., Secretary.

HARVARD MEDICAL SCHOOL. EVENING LECTURES.

The next lecture will be given on Thursday evening, November 22d, at 8 o'clock, by Prof. W. T. Councilman. Subject, "Bright's Disease." Physicians are cordially invited.

RECENT DEATH.

ALEXANDER REED HOLMES, M.D., died in Canton, Mass., November 11th, aged sixty-eight years. During the Rebellion he served as surgeon in the Third Massachusetts Volunteers and later on the U. S. S. Nipsic.

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the American Gynecological Society, Volume XIX, for the Year 1894.

The Story of Rodman Heath or Mugwumps. By one of them. Boston: Arena Co. 1894.

Functional Constipation. By W. Blair Stewart, A.M., M.D., Bryn Mawr., Pa. Reprint. 1894.

The Effects of Ethyl Alcohol on the Affinity of Hemoglobin for Oxygen. By John Davis Kales, M.D., Chicago.

A Resume of Twelve Hundred Examinations for Life Insurance. By William H. Dukeman, M.D., of Los Angeles, Cal. Reprint. 1894.

Can Physicians Honorably Accept Commissions from Orthopedic Instrument Makers. By H. Augustus Wilson, A.M., M.D. Reprint. 1894.

Why Chronic Urethritis is Ordinarily Difficult of Cure and an Efficacious Method of Curing It. By Bransford Lewis, M.D., of St. Louis, Mo. Reprint. 1894.

Shipowners and Ships' Surgeons, Including Truth's Article "Doctors at Sea." On the Medical Department of the Mercantile Marine Service. By C. H. Leet, F.R.C.S. Reprints.

Observations on Bending of the Neck of the Femur in Adolescence, with Particular Reference to the Diagnosis and Significance of the Affection. By Royal Whitman, M.D., M.R.C.S. Reprint. 1894.

Fifteenth Annual Report of the State Board of Health of Illinois for the Year ending December 31, 1892, with an Appendix containing the Report on Medical Education and Medical Colleges, Revised to December 31, 1893.

Address to the "Honor Men" of the Barnes Medical College, St. Louis, Mo. The Medicinal Treatment of Peritonitis. Report of Two Cases of Second Infection with Syphilis. By James T. Jelks, M.D., Hot Springs, Ark. Reprints. 1894.

Original Articles.

THE COMMERCIALIZATION OF MEDICINE; OR, THE PHYSICIAN AS TRADESMAN.

A Sociological Study.

BY THEODORE W. SCHAEFER, M.D., KANSAS CITY, MO.

THE RULING IDEA OF OUR TIMES.

WE are living in an epoch of theoretical as well as practical materialism. The dominant, central idea of most every one is the speedy attainment of riches. In the past aristocracy was the fad and great source of imitation; now money is the primum mobile. Never was there so much wealth massed together, and never did history record so many millionaires, as now.

In all the principal schools of learning - both in Europe and America — we have apostles making propaganda for the new faith, and in the every day walks of life we see the spirit of the age manifesting its influence upon the various avocations. The materialistic or realistic tendency of the age, acting like a stimulus, sets the intellectual and physical powers of man in motion, influencing and moulding literature, the arts, the sciences, medicine, and, last not least, the governments in their activity of advancing the interests of commerce and industry. The history of civilization promulgates the fact that there is an onward drift of thought, an evolutionary progressive development of the various intellectual powers and capabilities, a continuous substituting of a higher for a lower kind of psychic influence, the social medium thereby being advanced in its industrial, moral, intellectual, esthetic, etc., phases - phenomena analogous to the history of evolution in the different departments of biology. The history of man is also the history of his thought, and the civilization of a people may be considered the reflex of its intellectual status. Each sociological period has its ruling or guiding idea, which produces its characteristic mental type or impress. The bent of thought in the past was idealism, now materialism is the chief intellectual momentum of our times. The fact that materialism admits the value of itself alone to the exclusion of idealism, demonstrates its exaggerated tendency, which it manifests in all the intellectual expressions of our times, being a kind of idée fixe.

Industrial man is, κατ'εξοχήν, the product of the present drift of thought, which gives him his characteristic physiognomy, recognizable in all the avocations. The industrial or mercantile spirit, being a phase of materialism, pervades most all the pursuits of life. It seeks to over-value the material, that is, the commodities and money, entirely disregarding the speculative or metaphysical, only recognizing ideas which it can materialize or realize, so to speak, subjecting them to a practical application.

THE INFLUENCE OF MATERIALISM OR REALISM UPON MEDICINE.

Realistic and materialistic doctrines have greatly influenced the tendency of medical thought in our day. The inductive method (the investigations by the senses) is now chiefly cultivated in our institutions of learning, whilst the study of ancient classics is considered as not at all necessary and a mere waste of time. On perusing the literature of the day one easily perceives the realistic trend of thought, for the notion is more and more manifesting itself that common-school make their living in questionable ways. In the strug-

education is as good as college education; that all the classical barriers should be broken down; that the sciences, and medicine especially, should be brought within the easy reach of every one - in other words, they should be popularized; and, lastly, that these studies should be divested, in some mysterious manner, of their intricacies or minutiæ, and made practical and comprehensible to both tradesman and student. The practical man, or homme machine, does not believe in any social or intellectual restrictions, but fosters free-trade ideas, so to speak, believing himself competent to hold any of the educational stations of life. Being a genius for business, he chiefly concerns himself with the realities of life, and considers those qualities, from his mode of thinking, which contribute to social efficiency and material prosperity, of far greater importance than those which are essentially cultural and humanistic. He divests medicine of its time-honored humanistic and classical embellishments and drags it out of its professional realm into the domain of commercialism.

THE COMMERCIALIZATION OF MEDICINE.

In these days of active competition, when the Darwinian motto, "the struggle for existence," finds its practical demonstration, there is not a single human avocation left untouched by the grasp of materialistic philosophy - not even theology!

Medicine, once a profession, is now a trade, and is making rapid strides towards its complete commercialization. The medical jobber has but one goal, and that is the acquisition of wealth. All higher ideals must give way to satisfy material desires. The physician of to-day must possess a mercantile mind and adapt himself to modern conditions of life if he hopes to make a success of his calling, otherwise he is a failure. The possession of a diploma, first of all, and a good social knowledge and how to use business methods with advantage, are factors of prime importance. A thorough medical knowledge is not essential, for it is a notorious fact that those who possess only a smattering of medical knowledge succeed best!

On walking along the streets of our large cities one is really amazed to see the enormous number of doctors' signs dangling in the air. Every little country town has more doctors than it can support. Almost on every country cross-road a doctor is waiting for patients. Why so many doctors? and can all of them make a living? During the preparation of this article, I find on my table the September number of The Forum, which contains the very erudite and elaborate article, "The Pay of Physicians and Surgeons," by Dr. George F. Shrady. On reading the article, I find a few discrepancies in regard to the income of the average physician. His estimates are inaccurate and misleading. I wish to state right here that a great deal of ignorance exists in the minds of those contemplating the study of medicine. The supposed fabulous income of a great majority of physicians is a fiction! The fact is that the young physician, in the first five years of his practice, hardly earns his board, and his income often does not amount to fifteen dollars a month in cash!

It is but natural to expect, by reason of the appalling number of struggling physicians, that pauperism is making itself felt in the overcrowded ranks of the medical profession in this country. Many physicians gle for bread ethics are cast aside and the code remains a dead letter. The present socio-economic conditions are responsible for the existence of a medical proletariat! Every one of them wants to live, and in the struggle for self-assertion the conventional and disguised warfare of civilized life, called "competition," nothing else but individual antagonism, is brought into play. The saying, that "the forward dog gets the bone," finds its application even in medicine. This egotistic spirit has created the specialist, who is encroaching more and more upon the domain of the family physician, whose days are counted. A purely one-sided education of special branches in medicine has taken the place of a universal or humanistic education. When our so-called "medical colleges" (medical com-bines!) turn out men reared in inferior environments, with rudimentary ethics and who are sadly deficient in literary as well as scientific qualifications, what can we otherwise expect? These commercial medical colleges send out men equipped with didactic, not practical, knowledge. Physicians are not slow in adapting themselves to the changes of the social organism. They are becoming more and more gregarious, instead of remaining individualistic in their habits. Egotism must naturally give way to altruism. In congregating in large buildings, they imitate the sociality of bees, for they realize that concerted action (cooperative association) is far more remunerative in its results than antagonistic or competitive individualism. The conditions favoring the aggregation of physicians have greatly changed the socio-economic status of the medical practice. The social forces are working towards collectivism, which favors division of labor with differentiation of function and increased centralization.

Nowadays, especially in the cities, physicians are becoming more and more mercautile by imitating the industrialists or shopkeepers. Their offices gravitate toward the heart of the city, where medicine becomes centralized in large buildings. Here physicians are brought into intimate association; they learn to cultivate friendly sentiments and absorb knowledge from another, instead of pursuing an aggressive, individualistic existence in a state of segregation. Here is life and motion. The busy ring of the telephone, the familiar click-click of the typewriter and even of the telegraph instrument (by the railroad surgeon) strike one's ear. Amid this tumult of mercantile enterprise we find the specialist, the representative of medical mercantilism, busily engaged in sending out his pamphlets broadcast to physicians, soliciting their patronage, just like the merchant who sends out his circulars. Is this not advertising? In short, the modern doctor's office is transformed into a mercantile

Our native American is, par excellence, the Con larpuón of this country, and feels himself at home in medicine as the duck does in water. The mercantile spirit that dwells in his bosom is responsible for the present chaotic condition of medical practice. He has commercialized every branch of the medical art. The medical industrialist flourishes in greater numbers in this country than elsewhere. His mercenary mind creates medical combines or trusts (so-called "medical colleges," hospitals, dispensaries, etc.), which are a detriment to the medical profession at large. Through the instrumentality of these collective medical bodies, has is enabled to advertise and aggrandize himself and

dents and doctors, depriving the latter of their proper clientèle.

Everything points towards centralization and nationalization in medicine. These medical combines are becoming more and more selfish and aggressive and their purpose is to centralize medicine and to crush out the independent, general practitioner. Most of our hospitals, clinics and dispensaries are controlled by medical cliques who endeavor to monopolize all surgical and medical work, excluding the outside physician from participation. Physicians are now doing less and less medical and surgical practice, and the day is not far distant when patients will be treated in institutions and the general practitioner will be dispensed with.

Medical practice is nowadays becoming so unremunerative that physicians are compelled, from sheer necessity, to seek for secondary avocations in order "to keep the wolf from the door." Most physicians are on the lookout for positions that are compatible with their calling. There is a lively scramble for positions that are remunerative. We have physicians who do contract labor for life-insurance companies, lodges, societies, railroads, street-car and cable lines, factories, mills, mines, smelters, packing-houses and other corporations too numerous to mention. Just as we have our corporation lawyers, so do we have our corporation physicians and surgeons. As every employé is assessed a certain sum monthly from which the corporation physician or surgeon receives his salary, it will be easily perceived that this contract labor of physicians does a great harm to the medical profession and contributes materially in lowering its dignity.

So much for medical institutionalism and contract labor. The changing social organism shows us conspicuously that the family physician is nearing his extinction, being supplanted by the specialist, who in turn is now suffering from institutional encroachment. The clamor for public medical positions, municipal, state and federal, is great. The student of socio-economic medicine can predict with a fair show of approximate certainty that we are rapidly approaching the times when all colleges, hospitals, clinics and physicians will be under the supervision of the general government.

THE TREATMENT OF THE SO-CALLED IN-CURABLE PURULENT PLEURISIES BY THE SIPHON.¹

BY C. G. CUMSTON, B.M.S., M.D.

THE incurability of a purulent pleurisy arises from two factors entirely different, namely, general cause, local cause.

(1) General. — Any pyemia, no matter of what origin, can show itself in the pleura, which will manifest this infection by the presence of pus in its cavity. In this case, the danger resides in the general condition and not in the pyothorax, which is only one of its complications. The cure of this pyothorax does not determine the cure of the patient.

(2) Local Factors. — Here the pyothorax is all the disease, which has fixed itself on the pleura at once of as a final act of its evolution. A local treatment constitutes the necessary and sufficient condition for the cure of the patient. But one must distinguish the conditions of the prognosis which are united to a thousand

The his practice and derive a revenue from stu-

varieties of pathological conditions of the lungs and small diameter. Once the incision made, and large pleura. Is there a chronic pneumonia, sclerosis, tuberculosis? Is there a pneumothorax? In a word, has the lung lost or retained more or less of its vitality and expansibility? And as to the pleura, are there any false membranes? and if so, are they soft, fibrous or connective, thick or rigid, organized or not? Lastly, and especially, is there chronicity, and has the respiratory apparatus contracted the habit of remaining

In recent favorable cases, devoid of all complications, all methods, such as aspiration, incision, or resection, may bring about a cure. Each member of the profession will extol the method that he has employed and which has been successful. But if he fails, he will say: "My treatment did not succeed because the lung would no longer expand or because I did not resect a large enough number of ribs, etc. The trouble is in the patient, in his lung, in his pleura, and not in the treatment, which having been a success in such or such a case, must be the same in another." For myself, it is to these incomplete procedures as indications, consequently incomplete as results, that we owe all these invalids, going through their life with fistulæ, cachectic, and ending in early death. It is in these cases that Professor Revilliod's method should be brought forward; and it is on this special point that I have consecrated this memoir. In other words, I would like to demonstrate to you this evening that cases, incurable by the so-called classical methods, are curable by the siphon as employed by the distinguished clinician of Geneva.

The instrument is quite simple. It consists of a tube about one and a half centimetres in diameter. Block rubber is preferable. The end which is inserted into the thorax has a rubber bulb which aspirates in a sense from the thorax down. A simple rectal-injection pipe is on the same principle, only in Revilliod's tube the bulb is about two feet from the end of the tube inserted in the pleura, and there are about three feet more which drop into a receptacle. They use the ordinary wine flask, but any glass that will hold about a litre of water is quite sufficient. The tube once inserted in the pleura is held in place by adhesive plaster and allowed to remain there. The further end of the tube is placed in an antiseptic solution - usually carbolic acid or creoline - so as to prevent the air entering the tube. When there is no fistula the incision, which is five or six centimetres in length, is made near the posterior axillary line, that is, near the anterior border of the great dorsal muscle, whose fibres can be cut without inconvenience in the seventh or eighth intercostal space on the right, and in the eighth or ninth intercostal space on the left. The Davidson Company are making some of these tubes, and I hope ject, I would refer them to the discussion which took they will shortly be ready.

I will not take your valuable time in giving you a résumé of other methods, but will be to the point and establish the principles of the method under question as it is actually practised. I admit that at the commencement and in cases considered as simple abscess of the pleura, thoracentesis can be sufficient, as is often observed in children and even in adults. If puncture does not suffice, if the collection reappears, an incision in the intercostal space must be performed, for I cannot admit that the siphon tube can be introduced through a trocar, no matter of what dimensions, nor that the Paul and Péan is that too many irrigations, too many pleural cavity can be properly irrigated by tubes of | 2 See Bull. de l'Académie.

enough to allow the pus and membranes to escape, the siphon is introduced. At the end of this simple operation the lips of the incision soon close hermetically around the tube, and from that time all that is necessary to bring about the cure of the patient is a rigid watchfulness on the part of the surgeon. Any other method in which there is no aspiration is bad, for it allows stagnation of air in the pleural cavity; and no matter what is done, the result is that there is an immobilization of the lung and retention of gas and liquid.

Let me add and insist on the following advantages that I have been able to note by this method of treatment. Expansion of the lung is the immediate result of the suction of the valve of the siphon, as I have many times witnessed. Consequently, when the lung is free from adhesions, amphorisme and the metallic sound indicating a pneumothorax, may instantly be produced or stopped by the valve of the siphon, thus explaining why lungs that had been retracted for a long period could be expanded to the ribs. In cases of pulmonary perforation, this is also a precious means of ascertaining if the fistula is still open or if it has closed. there be a pulmonary fistula, by playing on the valve of the siphon, one cannot evacuate the air contained in the pleurul cavity, while if it can be evacuated it is certain that no perforation exists. By drawing the lung towards the thorax, the salutary adhesions are not destroyed by the siphon, on the contrary, it favorizes their formation. Lastly, by the continuous aspiration that it produces on the liquid and gas as fast as they form it renders washing out of the cavity less necessary. The curetting of the false membranes and their withdrawal, conditions which are necessary for a cure, are produced by the permanent aspiration, which is so great that it has been known to draw blood and cause pain, so that the force has had to be lessened. In a word, the siphon cures without resection of the ribs and without fistula. According to Mouton in his thesis (Paris, 1883) the method of Estlander exposes the patient to fistula; Immermann states that Bülau's method is only successful when the empyema is recent and the pus not too thick; and Fraentzel, of Berlin, speaking on the same method, says that it should never be performed on tuberculous patients. Schede, of Hamburg, gives another objection to this method, namely, that the canula employed is easily obliterated, and that it requires immobility on the part of the patient which is difficult to realize. I have never seen Dr. Bülau's apparatus; but what I can say is, that by Professor Revilliod's method the patients can be up and about, and some have gone to the mountains.

To those gentlemen who are interested in this subplace at the Academy of Medicine of Paris, March 29, 1892, but which is too long to discuss here. However, it will be seen that irrigation of the pleural cavity has been thrown into discredit, and that it is no longer a question of antisepsis, an excellent thing in principle, but impossible to obtain in the cure of pyothorax, and is not a condition sine qua non of the cure. In fact, if the introduction of air into the pleural cavity is hurtful, it is by the pressure that it produces more than the micro-organisms that are introduced. essence of the ideas emitted by Verneuil, Constantin

currettings and too many resections are done. If we can bring about the normal anatomo-physiological conditions by the most simple means, obtain the desired result with the least possible expense, and, in this particular case, leave the patient with his ribs intact, this is the ideal.

I will now enumerate a few cases treated by Professor Revilliod as examples of what may be obtained.

Child, age nine. For four and a half years had had a purulent pleurisy, which was not discovered, and which opened spontaneously in the ninth intercostal space, from which a drop of pus was constantly dropping. The child was in the last degree of Professor Revilliod, called into conhectic cachexia. sultation, simply introduced a rubber tube into this spontaneous opening, which evacuated the pus and which, when once emptied by the siphon, kept a vacuum in the pleural cavity, and brought the lung back to its normal dimensions and situation. The cure was complete in six weeks, and the fistula had cicatrized perfectly. This happened fifteen years ago, and the

child is now a strong and healthy baker.

Case II. Pleurisy, primatively serous, dating back seven years, but which had become purulent after the Empyema and drainage performed ninth aspiration. in Vienna in July, 1891. Siphon at Geneva in October, 1891. Cure in January, 1892, consequently

Dr. X., a Moscow physician, age forty-five. No pathological antecedents, hereditary or personal. Strong constitution. In July, 1884, the patient had a left-sided pleurisy, for which he had been aspirated four times up to April, 1885. After a short cure, the fluid reappeared, and two more aspirations were done during November of the same year. In 1886, Dr. X. left for Vienna to consult Professor Nothnagel, and at his advice took a cure of compressed air at Reichenhall. From here he went to St. Moritz, where he remained until 1890. In April of that year the fluid returned, and a seventh aspiration was done, withdrawing three litres of serous liquid. In September the eighth aspiration was performed. In January, 1891, the patient came to Geneva to consult Professor D'Espine, who sent him to Professor Revilloid, and he entered the Cantonal Hospital in a private room. His general health at this time was not bad; no fever, no cough and no dyspnes. An examination of the thorax showed a medium quantity of liquid in the pleural cavity, occupying the lower two-thirds on the left side. The perimeter gave 48 centimetres on the left, while on the right it was 49 centimetres, showing that there was a tendency towards retraction on the diseaseds ide. There was no indication for making an aspiration, so the patient received a diuretic and resolutive treatment, which was followed by a satisfactory result. The 21st of May, 1891, the patient left for Vienna to consult Dr. Gersüny, who aspirated him (this was the ninth), and withdrew 1,550 grammes of a serous fluid tinged with blood. A few days after this, the patient was seized with shivering and his temperature was 40°. On June 5th the fluid reappeared, and an explorative aspiration gave pus. Dr. Gersuny made an incision in the sixth intercostal space in the anterior axillary line, which let out the pus, and a drainage-tube was inserted.

The patient left Vienna on September 30th, and returned to Geneva to consult Professor Reverdin, who made an irrigation with a solution of salicylate of soda,

that he might undergo the treatment with the siphon. Dr. X. entered the Cantonal Hospital the 3d of October. At this time he was pale, weak and thin, as any man would be who has suppuration going on and its accompanying fever. He wore a drain in the former incision and a bandage bathed in pus. The drain was removed, and a soft-gum catheter was introduced, and by aspiration 140 grammes of pus were withdrawn. A sound of metal could be introduced 20 centimetres into the thoracic cavity. The circumference on the right and left sides was the same as in January. After washing out the pleura with aromatic wine, the siphon was put in. October 5th the bottle contained 105 grammes of pus and false membranes; on the 6th, 80 grammes. Amelioration was continuous, the patient was up all day. Apyrexia in the morning and occasionally the temperature reached 38° in the evening. The siphon was removed early on the morning of the 18th, and the following day 10 grammes of pus were found in the pleural cavity. The fisuals was still long, and measured 17 centimetres; the siphon was left out until the next day, when the condition of the patient was worse. He had chills in the evening, and pus was forming, so the siphon was once more in-On the evening of November 23d there troduced. was fever produced by the retention of the pus, due to a clot in the tube. From November 27th to December 12th there was complete apyrexia; the false membranes diminished day by day, and the pus be-By aspiration some drops of came clear and serous. blood could be withdrawn, showing that granulations had commenced to form. The metallic sound still penetrated 13 centimetres. December 29th the serous liquid still contained some false membrane, but the fistula only measured 91 centimetres. 30th the patient was left without the siphon; the fistula was narrow and bleeding. The siphon was put in again on January 1st, as there was a retention of a dirty gray pus, mixed with blood-clots. January 16th there was only 20 grammes of serous liquid in the bottle, and in removing the tube from the wound a little blood ran out. A simple drain was introduced; but as the dressings were soiled daily by a disagreeable smelling pus, the siphon was put back for more aspiration for two days. At this time a No. 12 sound entered 10 centimetres into the fistula. On January 21st, the general condition being good, with complete apyrexia, the siphon was removed, and a simple dressing applied. January 24th a soft catheter could hardly penetrate into the fistula, which had retracted and only measured 5 centimetres in depth. The next day there was no fever, and the dressings were hardly This continued; the fistula closed; and on soiled. January 29th the following was noted: The circumference of the thorax was the same as on May 31, 1891, consequently there had been no retraction of the thorax since that date. On percussion, the lungs were normal; auscultation showed a normal superficial vesicular murmur, although less pronounced on the left than on the right; vocal fremitus normal. The patient left the hospital cured on February 4th, having regained his strength and flesh. When seen on June 5th he was still in the best of health.

Here is a patient who went about seven years with a collection in the pleural cavity, who had undergone nine aspirations; the last done by Dr. Gersüny, of Vienna, with all antiseptic precautions, was followed by and told the patient to go back to Professor Revilliod, a purulent change in the liquid, for two weeks later

the doctor made an incision in the intercostal space, giving issue to pus, and drained. From June 5th to October 3d (120 days) the patient changed his dressings daily, but seeing that his general and local condition became no better, and that he was in interminable suppuration, he decided to come to Geneva. soon as the siphon was established, there was a tendency towards cure, the pus was removed as fast as it formed and its quantity diminished progressively. The lung, which was 20 centimetres from the surface of the thorax gradually regained its place, thanks to the permanent aspiration of the siphon. Finally, there only remained a fistulous tract which obliterated and was completely cicatrized on the 109th day of treatment. This lung, which had been pressed upon for seven years by a collection of pus, when once siphoned and encircled by empty space, came back day by day to its anatomical relations and functions. The tendency towards retraction and deformity of the thorax was arrested as soon as this treatment was underway. The complete cure was effected in less than four months, and would have been more rapid if attempts had not been made to leave off the siphon, as when it was removed the lung contracted and took its old position.

(Notes of Dr. Maillart, assistant.) CASE III. Chronic purulent pleurisy, drained; dating back seventeen months; cured by the siphon in two mouths. Girl, age nine years, ten months. Hereditary antecedents good; all relatives died at an old age. patient had whooping-cough at seven, well cured, but remained susceptible to cold. On December 25, 1889, she came home from a Christmas-tree and went to bed. At this time, four of her sisters were sick with la grippe. A physician was consulted, who found a leftsided pneumonia, with congestion in the right lung. The patient could not lie on her right side. After several alternatives, fever recommenced, and the doctor found a left-sided pleurisy. In April, 1890, a tumefaction was found, low down on the anterior axillary line on the left side, which was painful when the patient moved, and prevented her from wearing corsets. This tumefaction became red, hard, painful and fluctuant. An incision was made in June, drawing off a great quantity of purulent liquid, and a drain was From this time, the wound had never closed, and a rather thick liquid kept running out on each side of the drain. At the same time the general health was on the decline, and the doctor advised the parents to take their child to the Hospital for Sick Children, from whence the patient was sent to Contonal Hospital in Professor Revilliod's service, on May 14th. Consequently, six months had elapsed between the debut of the pleurisy and incision, and eleven months between the incision and her entrance to the hospital, making a total of seventeen months'

The child was very thin, the skin dry and withered. She was bent; her respiration was short and jerky; face denoted suffering, and the child feared being touched. On examination of the thorax, it was found to be completely deformed. The spinal column was inclined to the right, the maximum of inclination being at the level of the fourth and fifth dorsal vertebræ. It seemed to have undergone a torsion on its axis, the spinous apophyses were situated more to the right than the bodies of the vertebræ. The right half of the thorax formed a projecting arc and the intercostal spaces were distinctly marked. On the contrary, the

left side was considerably retracted. The posterior aspect was flat and excavated from behind forwards. In front the entire sternal region presented a boatshaped depression, the main axis of which was vertical. This depression was so deep that the patient could put both her closed fists into it. The sub- and superclavicular fossæ were more retracted on the left than on the right side. A fistula was seen on the left over the eighth intercostal space in the anterior axillary line, and all around the orifice there existed a zone of erythema due to the irritation of pus. By percussion the entire left side of the sternum was dull, and fremitus was greatly diminished. Auscultation showed that vesicular murmur was entirely abolished everywhere, but that in profound inspirations one could hear râles in front and back at the base. The heart was deviated completely to the right. Duluess extended horizontally from the sternum at the second intercostal space to the right auterior axillary line and descended vertically to the fifth space, where it was conformed with the liver. The point could be seen to beat under the fifth rib on the right, twenty-three centimetres on the inner side of the axillary line, and extended (though losing by degrees its intensity) to the entire auterior part of the thorax on the right, up to the third intercostal space. The circumference of the thorax was fifty-six and a half centimetres — twentyfive and a half centimetres on the left, thirty-one on the right.

From this examination, one could conclude, as in Case I, that the left pleural cavity was filled with pus, which, in spite of an orifice allowing an exit to the fluid, situated in a dependent part and with a drain inserted, only came away drop by drop. This production of pus dated back seventeen months, and the retention of the pus, which could not escape, explained the cachectic condition of the patient. The deformation of the thorax indicated a retraction of the ribs. This was another case in which, if it had been treated by the ordinary methods, a certain number of ribs would have been resected, and curetting and irrigation of the cavity performed. But Professor Revilliod simply introduced his siphon through the fistula. On May 16th, the drain was removed, and a metallic sound introduced into the pleural cavity could be made to go in all directions, even to the clavicle. As soon as the drain was removed, about one hundred grammes of thick, grumous, green pus ran out. The siphon was introduced, withdrawing more pus and then blood. Soon there was a real hemorrhage, necessitating the elevation of the bottle to nearly the level of the thorax. For twenty-four hours the blood would rush out each time that the bottle was lowered, but would cease immediately when raised again. May 17th, the bottle was lowered and the hemorrhage did not return; but the patient complained of an internal dragging sensation due to the expansion of the lung. On May 19th, a scarlatiniform fever appeared, but which did not disturb in any way the rapid progress towards the cure of the patient. The pus diminished in quantity and became serous, and false membranes came away in great quantity. On the 27th, the patient was up, carrying her bottle. The intra-pleural tube had still to be left quite long, as it appeared that there was a pocket in the pleural cavity. On June 10th, a vesicular murmur could be heard in the upper half of the lung in front and behind.

The general condition continued to improve, so that

the patient left the hospital on July 11th, wearing the siphon, and came back from time to time to report. On July 23d there only remained a fistula, the siphon was removed, and three days later cicatrization was complete.

En résumé: A purulent pleurisy of seventeen months' duration, operated on six months after its appearance and a drain worn for eleven months, during which time, pus stagnated in the pleural cavity. The thorax was so deformed that the heart, which was pushed to the right, remained enclosed there by the depression of the sternum, and could only regain its normal situation after the cure of the pleurisy; the general condition became worse and worse. As soon as the siphon was inserted the pus was withdrawn as quickly as it The continual vacuum drew together was formed. the walls of the cavity, thus keeping the lung expanded and finally bringing it definitively against the The retraction of the ribs ceased, and two months of treatment by the siphon was sufficient to repair the ravages produced by seventeen months of suppuration.

Pleurisy becoming purulent, dating CASE IV. back twelve months, cured by the siphon. cure. A. J., age thirty-nine, type setter, had had a pleurisy since 1889, for which two aspirations had been done. Patient entered the Prieuré Hospital, where Dr. Picot aspirated for the third time, withdrawing pus. The doctor immediately made an incision in the eighth intercostal space behind, and drained; much pus with a fetid odor escaped. On December 11th Dr. Picot sent the patient to the surgical service of the Cantonal Hospital, and from there he was sent to the medical service on March 26, 1890. The patient was formerly strong, but alcoholic and worn out by seven His lung capacity or eight months of suppuration. measured about 200 cubic centimetres. On March 26th the siphon was introduced in the opening where the drain had been. All went well. The pus diminished daily; and on April 5th au apparatus for the pocket was attached, so that the patient could go to town and attend to his business. He came to the hospital from time to time to show himself. By May 12th the quantity of fluid that came away in twenty-four hours out the siphon; he coughed and expectorated, and This was done. asked to have it put back. When the patient returned on May 26th, he was again well. As there was no liquid in the bottle, the siphon was

The patient was lost sight of until the month of August, when he came to show himself; the cicatrization was perfect. A year passed by, during which the patient travelled, and drank freely. He showed the characteristic symptoms of alcoholism; morning pituite, trembling, nightmare. He coughed and expectorated considerably, and complained of sore points over the former pleural focus. At last, on September 8th, he was taken with a coughing spell at midnight, and the cicatrix broke, allowing a stream of pus to escape. The patient was kept in the service, and a simple dressing applied; but as the pus flowed away slowly, acentesis, giving issue to 750 grammes of thick, sticky, the orifice being narrow and the sinus irregular, the pa- greenish pus. May 13th, reproduction of pus; incitient was given ether on September 29th, the fistula | sion, giving issue to a large quantity of pus and false opened, and the siphon introduced. The good work membranes; siphon lavage with aromatic wine. Fever of the siphon was at once seen; the pus flowed out fell to 36°. May 31st, after a lavage, there were symp-

removed and a simple dressing applied.

and expectoration ceased. The general condition became so good that on October 6th the patient was up and about; on the 8th he asked to go, and came back each day for the wound to be dressed. time the patient led an active and adventurous life, giving himself up to numerous libations, but always wearing the siphon, which he has pulled out and put back. In a word, he leads a life which does not positively favor a cure. Nevertheless, as he well understands the working of the apparatus, he inserted it himself, and brought us each day the pus collected during the twenty-four hours. This was at first very thick and full of false membranes, but became more and more serous and less abundant, so that on November 21st the siphon was removed, and six days later the fistula was completely closed.

This is a case whose début dated back one year before the treatment in question was applied. Still more, it was a pleurisy formed of a certain number of pockets whose walls were rigid, ragged and lined with false membrane. The patient was an alcoholic, and difficult to manage. These attacks ended, however, by cure. This man, who had been about with a drain for seven or eight months, was able to attend to his business ten days after the siphon had been applied. The fistula dried without treatment in a few weeks, and would have done so much quicker if the patient The second had allowed himself to be attended to. siphon succeeded equally well in draining the cavities, which would have remained eternally without this treatment.

CASE V. (Notes from Dr. Maillart.) Purulent pleurisy during a scarlatinal nephritis. Great quantity of pus and false membranes, phlebitis, hectic fever, siphou, and cure. C. F., age sixteen, cook. Entered April 4, 1891. Has had measles, and the grip in 1890.

Present Disease. — The 5th of March, 1891, she contracted a disease which we considered as scarlet fever, according to the information that the patient gave, as well as by a nephritis from which she was suffering and a characteristic desquamation which appeared later. The patient remained in bed a few days, did not take care of herself, and went to work. Shortly afterwards, she commenced to swell, and complained was so insignificant that the siphon was removed. of a violent oppression; and the physician summoned Three days later the patient felt a little distress with- diagnosed an albuminuria, and sent her to the hospital.

Status. — April 4th, young girl, pale, anemic facies, feverish, swollen. Temperature 39.2° Anasarca noted in all the limbs. Great dyspnea. Dulness and diminution of the respiratory bruits at both bases. Cough without expectoration. Cyanosis. Irregular heart beats, allowing, however, the bruit de galop to be heard. Bilious vomiting. Cramps in the calves of the legs. Tongue dry. Urine rare, with a great brownish deposit containing 90 per cent. albumin, peptones, many leucocytes, degenerated red corpuscles and hyaline, granular and epithelial cylinders.

Treatment. - Wet cups and blisters over kidneys, cotton wool bandages, morphine, milk, diuretics. April 9th, phlebitis of the right femoral vein, mercurial ointment, wire splint. April 12th, début of acute febrile pleurisy. Temperature 39° and over. May 8th, thorregularly, and diminished in quantity daily; cough toms of syncope. The patient, when she came to,

remained in a feeble state, which lasted several days, and which reappeared when the bandages were changed or the patient moved. The left arm is atrophied a little, and there is paresis. June 10th, aspiration with the bulb shows that there is a perforation of the lung. The liquid of the irrigation, when slowly introduced into the pleura, appeared in the mouth with its characteristic taste, and produced cough with suffocation. From the next day, the siphon worked well, showing that the perforation had closed. June 22d, the lung is only seven centimetres from the thoracic wall. The little liquid furnished by the siphon is only limpid serum without membrane. June 24th, auscultation The siphon is removed. and percussion normal. June 30th, the fistula is closed.

The patient left on July 25th. The perimeter measured at the level of the cicatrix 35 centimetres on the right, 37 centimetres on the left. There was consequently an increased amplitude of the thorax on the diseased side. The left arm remained atrophied, its circumference being 18.3 centimetres at the upper end of the forearm (the right limb was 20 centimetres) and 19.5 over the biceps (right 21.5). The following table will serve to show the course of the disease.

		Per	CE	T. 0	F A	LBUI	an.			
April 7										20.
April 10										1.6
April 18										3.50
April 25										1.25
May 7										.40
May 25			•							.60
June 1	•						•			.25
Jul y 23			•	•		•		•		.00
	Pt	78 IN	TW	ENT	y-Fo	UR I	Hov	RS.		
May 23								31	l5 gr	ammes
May 28								10	ທັ	**
June 2								- 1	50	44
June 7									30	44
June 29									0	**
	P	KR (ENT	. OF	НЕ	MOG	LOBI	N.		
June 1										60
July 23										78
August 24										80
December 2	:0									85
		P	ATIE	NT'S	wı	ROIS	Т.			
June 10										34,400
June 20			•			•				33,100
June 30										35,30
July 15	•	•		•					•	41,600
July 30						•	•		•	42,200
August 25	•	•				•		•		43,800
December 2	5	•	•	•	•	٠	•	•	•	49,200

En résumé. — Here is a case of intense febrile scarlatinal nephritis, which at the end of the fifth week ended in a vast pleural abscess. As one thoracentesis was not sufficient, the siphon was applied one month after its formation. The action of the siphon was hindered by divers complications, pulmonary perforation, and apoplectiform nervous symptoms, rendering the irrigations most difficult, but which were necessary in this case on account of the large quantity of false membranes. Nevertheless, six weeks after the siphon had been in use, cicatrization of the pleural cavity was perfect without any tendency to retraction of the costal arc. The last report of the patient was on May 28, 1892. The cure was still complete, and the general health perfect.

CASE VI. (Dr. Archavski's thesis.) A child was taken on February 14, 1891, with a suppurating pleuro-pneumonia following scarlet fever. On March 10th, he was brought to the hospital. On the same

day the first thoracentesis gave issue to one litre of pus. A second thoracentesis, on March 16th, gave 400 grammes. The third thoracentesis, on the 22d of March, gave 580 grammes. The fourth, performed on April 1st, gave 400 grammes. On April 15th, incision and siphon. April 25th, the pleura was empty, and the lung came to the thoracic wall. The siphon was removed. A few days later an acute nephritis appeared, with a large quantity of albumin and general anasarca. Suppuration recommenced, and the siphon was put back for a few days. On May 13th, the cicatrization was complete, and cure definite. The patient was followed for some time afterwards, and always found in excellent health.

These six cases, which concern either chronic or complicated pleurisies which would have been considered as incurable, all ended in a complete recovery. This is a sufficient conclusion for justifying this memoir, and more eloquent than any commentaries that I could add. Tuberculous pyothorax, although not less interesting in our point of view, is a subject too special to find place here; but I hope at a future date to be able to give some personal experience on this question.

ACUTE LEUKEMIA.1

BY R. C. CABOT, M.D.

This paper is an attempt to answer the question whether it is reasonably certain that cases of acute leukemia have occurred.

My attention was first drawn to this question by a remark of Rieder's." "Certainly," he says, "some of the cases reported as acute leukemia, are properly to be considered as cases of inflammatory leucocytosis." In this opinion Rieder is supported by v. Limbeck, who considered the evidence insufficient to establish a separate acute type of leukemia. On the other hand, such text-books as Pepper's (new edition) and Strümpell's speak of the occurrence of acute forms of the disease as an established fact.

My very recent observation of a case first diagnosed as acute leukemia, where only a differential count with Ehrlich's triple stain showed the true diagnosis to be leucocytosis due to new growth,4 has further awakened my suspicion as to the value of diagnosis made without the assistance of some such method. Accordingly, it has seemed worth while to go over all the literature upon which the belief in the existence of acute leukemia is based, and scrutinize carefully the methods of diagnosis used in each case.

It is necessary to consider at the ourset just what evidence should be held sufficient to establish a diagnosis of acute leukemia.

First, we note the element of time. The duration of the cases published as acute leukemia (34 in all) varies between three days and nine weeks, the latter being the longest case on record under this title. Now, without attempting to lay down any precise number of days or weeks as a limit beyond which no case may last and still be considered acute, it may be stated that, considering the average duration of ordinary chronic leukemia (with which these cases are contrasted), any case which runs its entire course

¹ Read before the Clinical Section of the Suffolk District Medical

Society, October 17, 1894.

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Grundriss einer klin. Path. d. Blutes, Jena, 1892, p. 162.

Beitrage z. Kentniss der Leucocytose, Leipeig, 1892, p. 34.

Boston Medical and Surgical Journal, March, 1894.

within nine weeks may fairly be classed as acute. that all the published cases of acute leukemia may, I think, be considered established as far as their stated duration is concerned.

I say their stated duration; but we have next to consider by what evidence we can settle the dates of start and finish in any case. Now, as all the published cases ended in death, it is very easy to settle the boundary on that side; but the date of the beginning of the disease is much harder to settle, and for the following reasons:

(1) In the first place, the sudden onset of severe symptoms in a person previously considered well, is of no importance whatever as evidence of the beginning of a case of leukemia. Cases which show evidence of having existed for a considerable period are sometimes first discovered by an oculist, or the patient may consult a physician for some slight gastric or respiratory disorder, and in the course of routine physical examination the discovery of an enlargement of the spleen or lymph-glands leads to a blood examination, and so to the diagnosis - the patient's general condition being and remaining excellent.

As an example of this, I will cite the case of Winnie S., twenty-two years old, who came to the Massachusetts General Hospital in December, 1892, for Routine physical examination shortness of breath. leading to the diagnosis of leukemia, the patient was after some difficulty persuaded to stay a few weeks in the hospital, in spite of the slightness of her symptoms. The blood current showed: red corpuscles, 2,921,600; white corpuscles, 492,000; a proportion of one to six. A differential count showed a large percentage of myelocytes. The spleen reached nearly to the navel; yet she felt so well that after a day or two it was difficult to keep her in the hospital. Eighteen months later she came to the hospital again to report that she felt entirely well, and had been so since leaving the hospital. She was married, had a healthy child, did her own housework, and was by no means an in-The blood and spleen were practically as valid. before.

Another case of very marked leukemia which I kept track of after her discharge from the hospital was able to be about and do some work until about three weeks before her death, when there was a sudden onset of symptoms resembling those reported in cases of acute leukemia (so.called). Any one seeing her for the first time in this attack, and following the case to the time of her death, three weeks after, might have supposed it to be an acute case.

Dr. Hubbard, of Taunton. was kind enough to write to me not long ago about a case of leukemia who was under observation at the Massachusetts General Hospital in July, 1892, and who has since been under his care. He tells me that she had been at work a good deal of the time since leaving the hospital, and of late has safely passed through a severe attack of lobar pneumonia. The blood is still leukemic.

Such cases as these show how largely latent a case of marked leukemia may be, and how easy it would be for any one seeing the case for the first time during the last weeks to suppose it an acute case.

In order to fix with any certainty the time of the beginning of a case of leukemia, one must have exbeginning of a case of leukemia, one must have ex-amined the blood before the date supposed to mark the beginning of the disease, and be able to state that no changes characteristic of leukemia were present

5 1893, vol. i, p. L 14.
6 See case of Mrs. S., quoted in Boston Med. and Surg. Jour., March. 1894.
7 Die Zählung der Blutköperchen, etc. Liepsig, 191, p. 165.
8 Boston Med. and Surg. Journal, loc. cit.

before that date. Now, it is obvious that a physician would rarely have opportunity for such examination previous to the beginning of the disease. Clearly, therefore, it must always be difficult to be sure of a diagnosis of acute leukemia. That acute, severe symptoms occurred with a leukemic condition of the blood, and that death followed within a few weeks, is only what occurs in cases of leukemia known to have existed for a considerable time.

(3) But now, supposing that we settled that it is really an acute case of some kind, what further evidence is needed to show that this acute disease is really acute leukemia.

It has been supposed until within a few years that leukemia was one of the easiest of diseases to diagnose; and although no one would now consider it a very hard one, it requires something more than a glance at the blood and the detection of an enormous number of white cells in the field to make the diagnosis. Yet upon no greater evidence than this, several of the writers whose reported cases I have studied, rest their diagnosis. In a single field of an immersion lens (one-twelfth) with a No. 4 eye-piece, which of course is very small, I counted 65 leucocytes in the blood of a case of cancer of the kidney a few weeks ago. The field was simply crowded with them, yet from other evidence it was clear that the case was not leukemia. I shall speak more in detail of this case later on. It is mentioned here only to show how fallacious conclusions based on the appearance of an unstained blood slide may be.

But further than this, even a careful count of the red and white corpuscles and the detection of an enormous increase in the latter by actual count, is not sufficient without further data to prove that the blood is leukemic.

It would seem unnecessary to repeat at this time a fact so widely known and so firmly established as this; but that it still needs to be repeated is shown by the fact that such a Journal as Sajous' Annual, on which I suppose many of us have to base our ideas, quoted last year as established 19 cases of leukemia, in most of which the diagnosis was based on a simple increase in the count of white cells and in some of which no count at all was made. In fact, some of these cases were guessed at from the appearance of the blood-slides, and in a few, no blood examination of any kind was made.

Now, in fact, leukemia not only does not depend on a simple increase of the white cells, but in rare cases may exist without any notable increase of the white cells at all. And in the lymphatic form it is not uncommon to find a ratio of white and red no greater than that found in a variety of other conditions, such as cancer and the anemias of children. On the other hand, an enormous increase of white cells is occasionally found in cases demonstrably not leukemic.

Reinert quoted a case where a patient with abscess of one hand and multiple abscesses about the ankle showed a leucocytosis of 1 to 16, and a case of cancer of the stomach with a ratio of 1 to 12. Welsh, in "Pepper's System of Medicine," speaks of a cancer of the stomach with a blood count of 1 to 25. In the case of C. W., which I have previously reported,

the proportion was 1 to 24, and in a case of cancer of the kidney Maggie B., who entered the Massachusetts General Hospital the 7th of last July, under the service of Dr. W. L. Richardson, who has kindly permitted me to mention it, the proportion was 1 to 21. Dr. T. M. Rotch permits me to mention two blood-counts made for him by Dr. A. Wentworth in leukemic children, in which the ratio was 1 to 10 and 1 to 20 respectively.

Cases could easily be multiplied; but those mentioned seem to me sufficient to show that an increase in the count of leucocytosis, even very large, is not sufficient to show leukemia. In all the cases above mentioned the increase of white was due wholly to a multiplication of the polymorphonuclear cells and none of the characteristic myelocytes were present.

We need to know not only the number but the kind of white cells with which we are dealing, before we can be sure of our diagnosis. It is very striking to note how much the clinical picture of certain cases of malignant disease resemble those of a case of leukemia in every respect except in the one all-important detail of the kind of lencocytes to which the increase in white is due. I have seen in two cases of cancer with anemia, an enormous increase in the white cells and a large tumor in the splenic region. In both of these cases the subsequent growth of the tumor gave it a shape and a feel very different from that of an enlarged spleen, but for a time the resemblance was striking.

(4) Lastly, even the findings of the autopsy, which generally clear up questions of diagnosis in difficult cases, and which are appealed to in several of the cases published as acute leukemia, do not always give

us any help in leukemia.

A diagnosis of leukemia cannot be made from postmortem appearances alone. Certainly, Hodgkina's
disease, and possibly other conditions, may give rise
to appearances identical with those of true leukemia;
and as a marked increase of the polynuclear neutrophilic leucocytes may occur towards the end of a
case of Hodgkina's disease, the observer who had
made sure of an enlarged spleen and lymph-glands—
possibly tender long bones, with a marked increase inthe white cells, and finally with post-mortem appearances of leukemia — would probably reject with indignation the suggestion that his case may not have been
leukemia after all. Yet such a doubt is inevitable.

From what has been said it may seem that I am maintaining that the diagnosis of any leukemia, acute or chronic, is a matter of great difficulty; but this is not my meaning. The diagnosis of ordinary chronic leukemia is very simple, provided the observer makes a differential count of the leucocytes in addition to the ordinary blood count. It is not the diagnosis of leukemia in general that it is hard to establish, but of acute leukemia; for here, for reasons given above, it is rare for the physician to have access to the facts necessary to settle even roughly the date at which the disease began.

Putting together the conclusions arrived at so far, it appears that in order to make a diagnosis of acute leukemia, we need to establish:

- (1) The previously normal condition of the blood.(2) The presence in the blood of such numbers and
- (2) The presence in the blood of such numbers and varieties of white cells as occur, so far as is known, only in leukemia.
 - (3) A reasonably short course to the symptoms.

The negative results arrived at are:

(1) Increase in the white cells (even very large), does not constitute the disease leukemia, even when accompanied by enlargement of the spleen and lymph-glands.

(2) The acute onset of severe general symptoms is of no value as an indication of the beginning of a case of leukemia, for such is often seen in course of a case of chronic leukemia.

(3) There are no post-mortem appearances, and no physical signs (exclusive of the blood examination) peculiar to leukemia, acute or chronic.

In the light of these principles let us now examine the literature of acute leukemia with special attention, first, to the nature of the evidence submitted for their being acute; and second, of their being leukemic.

A glance at the accompanying table will show that out of the 34 cases reported, only three comply with the requirements. These are No. 27 (Senator's) and Nos. 31 and 32 (Obrastow's two remarkable cases). Every one of the others lack one or more of the proofs necessary to establish a diagnosis of acute leukemia. Most of the cases we may suppose to have been leukemia, and possibly acute leukemia; but there is nothing in the histories as given to prove that the disease had not been latent for some time before the onset of severe symptoms. In only six cases was any examination of the blood made previous to the stated beginning of the disease, and in three of these there was no differential count, nor any description of the individual characteristics of the leucocytes.

We are reduced then to three cases, as material from which to form our ideas of the type of acute leukemia. These three cases present some points of interest, and seem worth quoting in more detail.

Senator's case, published in 1890, was in a woman of forty-nine. She had had amenorrhea for a year, and had felt weak and feverish for three months. Such symptoms make us suspect that the disease may have been latent for some time, but an examination of the blood pronounced negative by such an observer as Senator must, I suppose, be accepted as correct, even though no actual count was made. His statement is that on June 2, 1890, he examined the woman's blood, and found "no increase of white cells — only seven or eight in a field of a No. 7 Hartnack lens." If the number of red corpuscles had been low, this number of white cells would, I think, have represented a considerable leucocytosis. But the author makes no. statements on this point; and we have to be satisfied with his assertion that the blood was negative, even though he made no actual count of red and white, and no differential count. At any rate, eight days later he did make a count, and found six white to every two red corpuscles. As to the characteristics of the individual leucocytes, he merely observes that they consisted mostly of the "small forms," and that he could not make out the nuclei. Presumably, it was a case of lymphatic leukemia with large increase of lymphocytes. During these eight days the spleen had become much enlarged and the patient had lost strength very rapidly. She died June 11th, nine days after the first (negative) examination of the blood. At the autopsy there was found ulcerative endocarditis, besides the large spleen and hyperemic bone marrow. This case, then, although defective in several particulars, seems to me to belong under the category of acute leukemia.

Obrastow's two cases are much more satisfactory,

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and present several extraordinary features. were reported in 1892.

CASE I. The patient was a boy of seventeen, hospital March 1st, with high fever and a pulse of 126. blood of spleno-myelogenous leukemianegative, both as to number and varieties of white cells. On this account a diagnosis of Werehof's disease was made. The patient continued to run a high fever and grew rapidly weaker. After four days in the hospital the spleen projected three fingers' breadth,

They and after a week a whole hand's breadth below the ribs; the liver, two fingers' breadth. The lymphatic glands were everywhere enlarged. March 10th, nine previously healthy, who for two weeks had been days after entrance, the spleen reached the navel. partially disabled from work by weakness and had This day the blood was again examined, and a ratio been troubled by frequent nose-bleeds and cutaneous of one white to every seven red was found, with a ecchymoses for the same period. He entered the large percentage of myelocytes - in short, the typical Physical examination showed that the liver and spleen later the spleen reached an inch beyond the navel, the were enlarged and projected six fingers' breadth below liver was a hand's breadth below the ribs, and the the ribs. The blood was examined, and found to be inguinal and axillary glands were of the size of hazel-

No.	Author.	Date.	Sex.	Age.	Stated Duration.	Blood-count previous to onset of disease.	Differential Count.	Remarks.
1	Friedreich	1857	F	46	6 weeks			Gangrenous stomatitis.
2	Isambert	1869	М	54	5 weeks	Yes. Normal		One to fifty at death, and never highe
3	Paterson	1870	F	20	11 days			ratio. No autopsy. Following confinement. Symptoms lik septicemia with inflammatory leucocyte.
4	Paterson	1870	F	?	14 days			sis. Like No. 3 in all respects.
5	Immerman	1874	F	17	6 weeks			Large abscess of lower jaw.
6	Kelsch	1875	M	26	7 weeks			Leukemie retinitis. Lymphoid tumor
7	Lauenstein	1876	M	59	3 weeks			in various organs at autopsy.
8	Küssner	1876	F	46	21 weeks			Severe stomatitis.
9	Ponfick	1876	M	19	5 weeks			
10	Litten	1877	F	24	5 weeks	Yes. "Minimal leu-		Following "pernicious anemia." Au
11	English	1877	M	24	12 days	cocytosis'		topsy showed "malignant osteomyelitis." Meningitis, endocarditis and pericar
12	Zumpe	1878	м	15	7 weeks			ditis.
18	Fränkel	1881	м	18	20 days		Most leucocytes	
14	Gaucher	1881	м	38	9 weeks		smaller than the red	Severe stomatitis.
15	Leube et al.	1881	F	30	7 weeks			Leukemic retinitis.
16	Waldstein	1883	м	44	44 days			
17	Wadham	1884	2	5	8 weeks			
18	Masius et al.	1885	м	22	9 weeks			
19	Gläser	1887	м	37	9			
20	Mu ser	1887	м	11	5 weeks			Ratio rapidly increased from 1 to 40 up
21	Ebstein	1887	м	23	6 weeks			to 1 to 18.
22	Hinterberger	1889	F	30	5 weeks		Yes	Leucocytes mostly polynuclear. Pus
23	Westphal	1889	м	16	6 weeks		Yes	cocci found in glands and liver. Blood is that of pernicious anemia with lymphocytosis. Red cells, 816,000; white,
24	Fränkel	1890	F	14	9 weeks	No count. Moderate increase in white.	Relatively few poly- nuclear cells	24,000. No blood-count. Diagnosis based on a "considerable increase in the white cells
25	Guttmann	1890	M	10	3½ weeks		Relatively few poly-	a few days before death."
26	Senator	1890	F	49	3 weeks	Yes. Previously normal	nuclear cells Small forms of leuco- cytes predominate	No actual count before the beginning of symptoms. Saw "only 7 to 9 leucocytes in the field of a No. 7 Hartnack lens."
27	Greiwe	1892	M	28	2 weeks		Yes. 35% of poly-	Had had cutaneous hemorrhages for
28	Eichhorst	1892	M	8	2 weeks		nuclear cells Leucocytes 88,000,	several months. Leucocytes only 7 to 8 u in diameter.
29	Litten	1892	?	?	1 week		mostly polynuclear Yes	Followed " grippe."
30	Obrastow	1892	M	17	4 weeks	Yes	Yes	Diagnosis satisfactorily established.
81	Obrastow	1892	М	32	2 weeks	Yes	Yes	Diagnosis satisfactorily established. Apparently caught by contagion from
82	Nobel	1892	M	40	10 days	No	?	No. 30. Gangrenous stomatitis. Blood 1 to 10.
88	Dansac	1892	M	17	5 days			No blood-count at all.
84	Nobel	1893	F	30	3 weeks		?	Stomatitis. Blood 1 to 50.

glands and spleen grew very soft -- so soft that it was difficult to feel the edges of the spleen at all. At autopsy there was found, besides the enormously enlarged liver and spleen with the ordinary diffuse lymphoid infiltration, a diphtheritic ulceration of the soft palate and a diphtheritic colitis, and pus cocci were found in the swollen lymphatic glands.

CASE II. Forty days after the death of this patient, the ward-tender who had taken care of him was taken sick with exactly the same symptoms - epistaxis, purpura, fever; and in three days his spleen was one finger's breadth below the ribs. The blood, as before, was negative at this stage of the case, but a week later showed a ratio of one to nine with a large percentage of myelocytes - typical leukemic blood. The spleen during this week had been growing fast, and now reached the navel, with the liver two fingers' breadth The lymphatic glands were also enbelow the ribs. larged in the groins and under the jaws. A few days before his death, which occurred eleven days after his giving up his work, he developed a bloody and gangrenous stomatitis, and the spleen, as in the other case, grew so soft that it was very difficult to feel its edge. Now this man had, as above mentioned, been wardtender in the ward where the first case was sick. He had taken the temperature, looked after the feces and urine, and helped in the examination of the blood and in the plugging of the nares (which had had to be done on account of the persistent nose-bleeds). The exact similarity of the two cases, and the likeness to an acute infectious disease, is certainly very striking. The cases are, so far as I know, unique, but the suggestion of contagion is certainly plausible.

I will not take up your time with any further details of these cases, except to call attention to the occurrence of severe stomatitis in both the last two cases and colitis in one, as particular attention has been called to these symptoms by Hinterberger on the cases published as acute leukemia. In three-quarters of all the cases published up to the time of Hinterberger's paper (1891) severe ulceration, either of the mouth or of the large intestine, had been noted. Nobel 10 states that stomatitis is present in 70 per cent. of all are inoculated intravenously the animals become acute cases.

In conclusion, it need only be said that if what I have been maintaining is true, namely, that there are only two or three satisfactory cases of acute leukemia in literature, it is very important that any one who has seen such cases should report them at once, so that the foundations on which our ideas of the disease are built may be strengthened. I leave it to you to decide how far our confidence in the existence of the disease can reasonably extend on the basis of at most three complete and genuine cases. I do not know how many swallows do make a summer, nor how many cases constitute a disease.

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THE BACILLUS COLI COMMUNIS.

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(Concluded from No. 20, p. 482.)

PATHOGENESIS.

ESCHERICH found that the bacillus coli communis from normal feces was fatal to rabbits and guinea-pigs. According to Macaigne 17 and Lesage, 18 however, a dose of 1 to 2 c. c. of a bouillon culture is rarely fatal to these animals, and hence the bacillus under normal circumstances ought not to be considered virulent. When large amounts (4-5 c.c.) of a bouillon culture drowsy and stupid and show diarrheal symptoms. After a day or two they become paralyzed, comatose, and finally die. Post-mortem appearances vary. When death is quick from septicemia, the subcutaneous cellular tissue is edematous, the lymphatic glands are enlarged and the pleural and peritoneal cavities often contain a fluid or fibrinous exudation. The intestinal walls are usually injected but no macroscopic changes are to be made out. The solid viscera are hyperemic and contain the bacilli in large numbers.

Gilbert and Lion 19 observed that sometimes inoculation of rabbits with bacillus coli communis is followed by a slow progressive paralysis, resulting fatally in from twelve to forty-nine days. On post-mortem examination of these cases numerous microscopic changes are found in the spinal cord, especially in the lumbar region. Numerous cells of the gray matter are granular and stain very feebly with the ordinary dyes, the nuclei being atrophied or invisible. Other cells are wholly atrophied and their prolongations shrunken. In other words, a real poliomyelitis is found.

When the bacillus coli communis is isolated in pathological conditions of the intestine it is more virulent than when taken from normal feces, a dose of 1 c. c. of a bouillon culture producing a septicemia

Hinterberger: Deut. Arch. f. klin. Med., vol. xlviii, p. 338, 1891.
 Nobel: Deut. Med. Zeit., p. 1176, 1892.

of rapid progress. The most virulent cultures, according to Lesage, Gilbert and Girode, so are obtained from the intestine in cases of cholera infantum. These are always fatal in from one to three days.

The bacillus coli communis obtained from suppurative processes, such as ischio-rectal abscesses, suppurative angiocholitis and cholecystitis, is less virulent and usually causes a suppurative inflammation on inoculation into guinea-pigs. The lesion may be a localized abscess or a spreading phlegmonous inflammation, from which the animal may die in a few days or recover after a long illness.

Like many other pathogenic bacteria this micro-organism seems to lose its virulence on artificial culture media. The most virulent forms, producing septicemia when first tested, may become pyogenic, after a few generations, and finally non-virulent.

Gilbert's 21 careful study of the effects on rabbits of repeated intravenous injections of small doses of bouillon cultures of the bacillus coli communis has brought out some very interesting facts. By this method he produces a gradually increasing intoxication, marked by three stages: first, paralysis, secondly, clonic spasms, and finally, tetanic convulsions. The first stage is characterized by paralysis of the voluntary muscles. The heart and diaphragm are not affected. The animals become stupid and drowsy and cutaneous sensibility is diminished. The eyes protrude, the pupils are dilated and there are fibrillary twitchings of the voluntary muscle fibres. In the second stage the paralysis is succeeded by clonic convulsions, There is nystagmus affecting all the extremities. and marked increase of the reflex excitability of the skin and organs of special sense. The spasms are quick, short, violent and irregular, at first occurring at intervals, then becoming more frequent. They come on spontaneously, but they may also be provoked by noises or by touching the skin. In the third stage the convulsions become tonic and myosis succeeds the mydriasis. The body is curved in opisthotonos, the limbs extended, the claws spread out, the jaws clenched and the eyes closed. Death soon supervenes. During the whole period the heart is but little affected and it continues beating long after respiration ceases. The respiration is at first quickened and later becomes deep and sighing. During the tetanic convulsions it is suspended.

When the injection is stopped during the first stage the animals usually recover in a few hours, with abundant micturition, diarrhea and a fall of temperature of several degrees. If the injection is stopped during the second stage the animals may even then survive, but when the stage of tetanic convulsions has supervened, death always follows.

Roger, so of Paris, has obtained some very interesting results in his experiments on the effects of the soluble toxic products on frogs. He found the successive stages of paresis and hyperexcitability as in rabbits but observed in addition a final paralytic stage. In the second stage of the intoxication the reflex excitability of the spinal and medullary centres is greatly increased. At the end of this period the muscular contractility is weakened and the electrical irritability is diminished. Myographic tracings, showing the response of the gastrocnemius to electrical stimulation, and Wyss in 1887 found the bacillus coli communis in resemble those of fatigued muscles. The contractions pure culture in cases of cholera nostras and thought of the heart are slowed and in late stages they become | that it was probably the cause of the trouble. Since

continue after the respiration ceases and the animal is apparently dead.

These toxic products must be formed normally inside the intestine and absorbed along with the other soluble constituents of the chyle and it is an important matter to decide what becomes of them and how the system is protected against their evil effects. Gilbert thinks that in health part of them are decomposed by the liver and the remainder excreted, practically unchanged, by the kidneys. The intravenous injection of fresh urine causes symptoms very similar to those described above. Furthermore the toxicity of urine is diminished after the administration of intestinal antiseptics, such as salol or naphthol, which undoubtedly interfere with the growth of the bacillus coli communis, and is increased in certain diseases which interfere with the functions of the liver.

The question is of great practical importance in its relation to the causation of uremia and similar conditions. That the toxic agent in uremia is a constituent of the urine is undisputed, but the origin and nature of the substance has been the source of much The most recent authorities have given up debate. the old ideas that urea or carbonate of ammonium is the cause of the trouble and merely refer vaguely to certain products of tissue metamorphosis as the mischievous substances. No chemical analyses have been made of any of these substances but the symptoms produced by the inoculation of the toxic products of the bacillus coli communis are so similar to those caused by the intravenous injection of urine and to the clinical phenomena of uremia, that it is very easy to believe that they may all be caused by the same factor. The theory is a plausible one and deserves more careful elaboration than it has yet received. It seems probable also that certain functional nervous disorders, such as convulsions, paralysis, vertigo, headaches, etc., occurring in the course of intestinal or hepatic diseases, may be traced to the same cause, namely, an excessive formation or a diminished elimination of the toxic products of the bacillus coli communis.

THE RELATIONS OF BACILLUS COLI COMMUNIS TO

During the past five years the bacillus coli communis has been found associated with many different pathological processes and many diseases have been attributed to its action. Before discussing briefly the conditions in which it has been claimed to have an etiological relation, it is important to emphasize the fact that the bacillus coli communis is very often found a few hours after death scattered throughout the body. This post-mortem invasion of the organs, as it has been called, occurs almost invariably when there is any grave lesion of the mucous membrane of the intestines, such as tubercular or dysenteric ulcers, etc., and is also frequently observed after diarrheal diseases even when no macroscoscopic lesion of the mucous membrane can be made out. It is more rapid after death from exhaustive diseases, such as tuberculosis and diabetes, especially when the death agony has been a prolonged one. It is quicker in summer than in winter.

(a) Bacillus coli communis in Enteritis. — Hueppe decidedly irregular and feeble, though the pulsations then Gilbert, Girode, Netter, Lesage and many others have repeatedly found this bacillus alone in cholera nostras, cholera infantum and other forms of enteritis. Sometimes it is associated with other organisms of known pathogenic power, such as the bacillus of Friedlander, the staphylococcus pyogenes aureus, etc. Clinically the cases in which it has been observed have ranged from ordinary summer diarrhea to the severest forms of cholera. It cannot be claimed, however, simply because the bacillus coli communis is present in the feces, that it has necessarily any specific action in these cases, like that of the spirillum of Asiatic cholera. The bacillus coli communis is found in the feces throughout life and its simple presence in diarrheal feces proves nothing. Two observers, Gilbert and Girode, caused choleraic symptoms in guinea-pigs by passing into the stomach 2½ c. c. of a 24-hour bouillon culture of a specimen of bacillus coli communis from cholera nostras. This is also inconclusive since we know that the bacillus coli communis from normal feces when injected intravenously in guinea-pigs will cause the same symptoms, and in this instance the diarrhea is only one of the means of elimination of the toxine and is not due to a local action of the bacillus coli communis itself.

Several explanations of the relation of the bacillus coli communis are possible.

- (1) It may be changed by certain unknown conditions so that it takes on a virulence not possessed by the normal bacillus coli communis.
- (2) The normal bacillus coli communis may possess a limited virulence which enables it to set up an inflammation of the intestinal mucous membrane when aided by the irritation of decomposing matter inside the intestine.
- (3) The growth of the bacillus coli communis may be favored by the presence of certain kinds of food and the increased amount of toxines formed may irritate the mucous membrane of the intestine.
- (4) There may be other bacilli, not ordinarily inhabitants of the intestine, which resemble the bacillus coli communis in general character but are more virulent, and which may set up an enteritis when accidentally ingested.
- (5) Finally, there may be virulent organisms present in the intestine and feces which do not grow on the ordinary nutrient media and are overlooked in the examination.

So far as I know, no detailed experiments have been tried to determine which, if any, of these theories is the true explanation. From the results of the work of Gilbert and Roger on the toxines of the bacillus coli communis and of Barbacci on perforation peritonitis (v. infra), one is rather inclined to favor the second and third.

(b) Bacillus coli communis in Appendicitis.— The rôle played by the bacillus coli communis in the inflammations of the vermiform appendix is still very doubtful. The peritonitis which is so often a sequela of this disease does not differ materially from other peritonitides of intestinal origin and will be considered more fully below. As to the bacteriology of the primary inflammation inside the appendix, very few ob-Hodeupyl 24 mentions servations have been made. four cases of acute appendicitis in which the process was confined to the lumen of the appendix, in all of which he found only the bacillus coli communis. these I may add four more cases which I have examined. In all of the cases the appendix was gangre- pure cultures in non-irritating fluids, such as normal

nous but not perforated. Cultures made from the lumen of the appendices showed only the bacillus coli communis in three of the cases. In the fourth case there was a pure culture of a curious bacillus, resembling the bacterium Zopfii in some respects, which was not pathogenic for guinea-pigs. On the whole the observations are too few and incomplete to draw any conclusions from, but it is probable that the bacillus coli communis, if it has any action at all in these cases, is a secondary factor, the primary factor being a fecal impaction or some other cause of irritation.

(c) Bacillus coli communis in Perforation Peritonitis. - Many bacteriological examinations have been made in cases of peritonitis following perforation of the intestines or stomach and in nearly every instance the result has been a pure culture of the bacillus coli communis. So uniform has been this experience that it has been accepted almost without question that this organism is the cause of the disease in the vast majority of cases. The recent investigations of Laruelle 25 and Barbacci, 26 however, have shown that this is true in only a limited sense, and that other factors must not be disregarded. Barbacci's work is the most complete and throws so much light on the pathogenic action of the bacillus coli communis, that it will be well worth while to summarize his most recent article. He studied 14 cases of perforation peritonitis, of which

1 followed aspiration of a occal abscess. perforation of typhoid ulcers. of appendix. • • of strangulated hernia, of ulcer of the cecum. of gangrenous volvulus. of round ulcers of stomach.

In these 14 cases by the ordinary culture-method of examination he found the bacillus coli communis, 13 times in pure culture, once associated with the diplococcus of Fraenkel. In 13 of the cases he inoculated rabbits and white mice with young bouillon cultures made directly from the exudate and by this method found the diplococcus of Fraenkel in eight cases or about 60 per cent. This difference in results by the two methods is very instructive and illustrates the incompleteness of the ordinary method. It is due, no doubt, to the great readiness with which the bacillus coli communis grows on ordinary media and the great difficulty of cultivating the diplococcus of Fraenkel. study the subject more carefully he then produced artificial intestinal perforation in seven dogs, by means of the actual cautery, after laparotomy. All died of peritonitis within forty hours and in all only the bacillus coli communis was found at autopsy. By repeating the experiment on five dogs, but killing them at varying intervals after the operation, he found that other organisms are present in the early stages of the inflammation but all gradually die out with the exception of the bacillus coli communis. He was unsuccessful in trying to show that the bacillus coli communis could stamp out other organisms in mixed cultures on artificial media. He never found the diplococcus of Fraenkel in the exudate in dogs. On this ground and also because it cannot always be demonstrated in the exudate in man, he thinks that the diplococcus can be excluded as a factor of much importance.

The bacillus coli communis also cannot be regarded as the sole factor since intraperitoneal injection of

salt solution or bouillon, have no effect unless in large enough quantities to produce septicemia. If. however, it be cultivated in sterilized feces or ox-gall and then injected, a peritonitis invariably results. sterilized feces alone have no effect but seem to cause enough irritation of the peritoneum to allow the bacillus coli communis to do its mischief, besides furnishing a favorable medium for the growth of the bacilli inside the peritoneal cavity. Barbacci found also that the continued patency of the perforation is an important element. If the perforation is allowed to close, recovery follows in a certain proportion of the cases. The feces and intestinal gases, which are constantly poured into the peritoneal cavity, irritate the peritoneum as well by distention as by the chemical substances which they contain.

Barbacci concludes that the causal factors of perforation peritonitis are three in number: (1) The entrance into the peritoneal cavity of feces and intestinal gases. (2) The multiplication in the peritoneal cavity of the bacillus coli communis and possibly other microorganisms contained in the feces. (3) The constant irritation caused by the continued out-pouring of feces and gas into the peritoneal cavity. The general symptoms, moreover, are not those of a true septicemia but are due to a toxemia resulting from absorption of fecal products, especially the toxic proteids of the bacteria.

These observations of Barbacci are of great value, but it hardly seems justifiable to rule out the diplococcus of Fraeukel without more evidence than he presents. This micro-organism is possessed of far greater virulence than the bacillus coli communis, and its presence in 8 out of 13 cases is certainly not to be explained away by saying that it is accidental, without a much more elaborate study. Be this as it may, Barbacci's work is sufficient to show that the bacillus coli communis is the great bacterial element in peritonitis of intestinal origin, but that its pathogenic power is largely dependent upon the circumstances under which it gains entrance to the peritoueal cavity.

(d) Bacillus coli communis in Suppurative Processes in the Biliary Passages and Liver .- Under normal circumstances the gall-bladder and ducts are sterile; but here, as elsewhere, under conditions of irritation the bacillus coli communis is capable of setting up a severe inflammation. The bacillus is found in pure culture in many cases of suppurative cholecystitis and angiocholitis. The primary source of irritation is usually gall-stones, but in many cases the primary irritant is not evident. In these instances it seems as though the bacillus may be originally of a more virulent form. Charrin and Roger 27 injected a culture of bacillus coli communis, taken from a case of angiocholitis, into the gall-duct of a rabbit, and produced an inflammation very similar to the original one.

This bacillus is also found frequently in pure culture in hepatic abscesses, following either dysentery or gall-stones. In the former instance it reaches the liver through the portal circulation, but an observation of Veillon and Jayle 28 shows that it may not be the cause of the trouble. In one case they found no bacteria at the first examination, but a month later found the bacillus coli communis in pure culture. the reports of these cases no mention is made of the amœba coli, and probably, in some of the cases, at least, this organism was present but was overlooked. In abscesses following gall-stones the infection must take place along the biliary ducts.

(e) Bacillus coli communis in Diseases of the Urinary Tract .- Among the various diseases in which the bacillus coli communis is claimed to have an etiological importance, the acute affections of the urinary tract form a group. Achard and Renault * have found the bacillus coli communis, or its near relative, the bacillus pyogenes fœtidus, in acute nephritis. Reblaud 30 has observed the same organisms in acute cystitis in women. Fordyce at found the bacillus coli communis in pure culture in two cases of urinary infection following operations on the male urethra, and finally, Fordyce, Achard and Hartmann as have obtained it in pure culture in the urine in cases of urethral fever following the passage of the catheter. These observations are interesting and further investigation may develop the subject considerably. In the cases of urethral fever, however, it must be admitted that the trouble is quite as likely to be caused by the absorption of the urinary poisons by the abraded mucous membrane of the urethra as by the direct action of the bacilli. As has been repeatedly said, the mere presence of the bacilli proves very little.

(f) The bacillus coli communis in Miscellaneous Diseases.— These may be passed over without much comment, since in most instances the connection between the disease and the bacillus is very doubtful, and in some cases, at least, the presence of the bacillus is to be explained in all probability by the postmortem invasion which occurs so frequently.

Lesage and Macaigne * have found the bacillus coli communis associated with the diplococcus of Fraenkel and streptococci in several cases of lobar- and bronchopneumonia occurring in typhoid. The infection probably takes place in these cases from the mouth, where the bacillus coli communis is habitually present.

The bacillus coli communis has been found repeatedly in acute and chronic abscesses of the anal region. Muscatello 34 found it in an ischio-rectal abecess following an ulcerative proctitis and produced a similar abscess by inoculation in a guinea-pig. Hartmann and Lieffring, * who have studied the subject most carefully, are inclined to the opinion that the presence of this bacillus is due, as a rule, to a secondary infection, the primary lesion being caused by the bacillus of tuberculosis or the ordinary suppurative micrococci.

Chiari so found the bacillus coli communis in pure culture in the blood and organs of a case of general septic emphysema, following amputation of the leg for gangrene in a patient suffering from diabetes mellitus. Inoculation into guinea-pigs caused septicemia without emphysema. Chiari thought that the emphysema was caused by the gas-producing action of the bacillus coli communis on the sugar in the blood of his patient.

Besides these instauces the bacillus coli communis has been found on the valves of the heart in endocarditis, in the cerebro-spinal fluid in cases of meningitis, in the exudate in cases of salpingitis and endometritis and in various other circumstances, in most of which its etiological significance is not yet proved.

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Clinical Department.

TWO CASES OF GONORRHEAL RHEUMATISM WITH SPECIFIC BACTERIAL ORGANISMS IN THE BLOOD.

> BY H. F. HEWES, Medical Interne, Massachusetts General Hospital.

In March, 1894, I made bacteriological examinations of the blood of four patients with gonorrheal rheumatism. In all the cases the affection was polyarticular, accompanied by some fever; and an urethral discharge containing gonococci was present. Repeated cultures were taken from the blood, with careful aseptic pre-cautions. The culture media used was a preparation compounded by Dr. J. H. Wright, assistant in pathology at the Harvard Medical School, upon which he had succeeded in growing the gonococcus. In three cases the result was negative; no colonies were obtained from the blood upon repeated cultures. In one case bacterial organisms of a specific nature were found to be present in the blood in repeated examinations. This case, with the permission of Dr. F. C. Shattuck, I

CASE I. M. D. entered Ward 31 of the Massachusetta General Hospital March 14th. He gave the following history:

One month ago he caught a severe cold. Four days later his left knee and ankle became painful, swollen and red; some edema of leg. Next day his right thumb and ankle were affected. The trouble in the joints increased; he felt prostrated and feverish, and sweated considerably.

September 23. Entered Ward 29, surgical, at the Massachusetts General Hospital. At this time the

left shin edematous; the right thumb and right ankle slightly swollen.

While in ward, developed a keratitis of March 4th. both eves.

March 14th. Transferred to medical wards.

He had never had rheumatism before. Gonorrhea eight years before. Had had connection with a woman five weeks before onset of present attack, but had noticed no discharge from urethra or painful micturi-

His examination upon entrance to Ward 31 revealed the following: appears very sick, dull and prostrated. Phalangeal joint of right thumb slightly swollen and tender, not red. Left knee tender and much swollen; fluctuation present; girth 151 inches (right knee 141 inches); patella floating. Left ankle swollen and tender, not red. Discharge of puriform material present at urethral meatus, which contained gonococcus upon bacteriological examination. Heart negative. Chest negative. Temperature 102°. Pulse 95. Chest negative.

March 16th. The patient has continued dull and feverish, the temperature at night running between 101° and 103°. Salicylate of soda, given in full doses for three days, seemed to have no effect upon the joints or fever.

March 17th. Right knee became painful and swollen. On this day a culture was taken from the blood upon the special media. A control culture was taken upon glycerine agar at the same time. At the end of fortyeight hours several minute whitish colonies appeared upon the specific media. These colonies, upon microscopical examination, proved to be composed of a biscuitshaped diplococcus resembling the gonococcus of Neisser in morphology and reaction to staining reagents. Colonies transferred to blood-serum, agar and gelatine media failed to reproduce. Colonies transferred to the specific media upon the first day reproduced; those transferred later did not.

No colonies were obtained upon the glycerine-agar culture from the blood.

The patient continued to show signs of general infection. The temperature remained continuously above 100°, rising to 102°-103°. The right ankle-joint, the phalangeal joint of left great toe, the right wrist, the metatarso-phalangeal joint of right little finger became involved in turn.

April 1st. The process began to subside; no new joints became involved. The affected joints continued stiff and somewhat swollen, but gave no more signs of an acute process. No urethral discharge present. Temperature still between 99° and 101°.

May lat. Temperature normal for first time. Joints stiff, and much evidence of chronic thickening present.

Discharged May 7th.

Cultures from the blood were taken March 20th and 24th and April 1st. In the first two cultures, colonies were grown similar in all respects to those described in the account of the first culture. growths were obtained from the culture of April 1st.

In August, 1894, I made examination of the blood of five patients with gonorrheal rheumatism. cultures were made upon the acid gelatine media of Trurro. An urethral discharge containing gonococci was present at the time the cultures were taken in all C8868. In three cases no colonies were grown from the inoculations. In two, specific bacterial organisms left knee and ankle were swollen, red and tender; the were grown from the blood in repeated cultures; and in the more typical case of the two the character of the organism was tested by inoculation into a bitch. This case, with Dr. E. G. Cutler's permission, I report.

CASE II. G. A. entered Ward 7 of the Massachu-

sette General Hospital August 20th.

Five days ago he was kicked by a mule in the left hip, the kick knocking him over. Got up feeling all right. Next day, left hip and groin very stiff and Next day, left hip better, but right hip and painful. groin painful and stiff, with shooting pains up into loin and down thigh. He has passed bloody urine on several occasions since accident, but not upon every No pain on micturition or defecation. micturition. Three days ago both eyes became injected and painful, with sticky discharge. No chills or chilly sensations; no headache; no vomiting. Bowels all right. pain in chest or belly. He has had gonorrhea about a month, and still has discharge from urethra.

Examination showed patient to be well nourished, but with a dull and heavy aspect. Both eyes injected and sore; puriform secretion in the inner canthus of both eyes; cornea clear; pupils equal and react. Tongue clean and moist. Heart and lungs negative. Abdomen soft. Slight tenderness in left groin. Bladder not distended. No buboes. Spleen felt below costal No paresis. Knee-jerks present. Moves hip-joints with pain, especially right hip. Tenderness and slight swelling over right Scarpa's triangle. Tender over right iliac crest and right half of sacrum. No tenderness over sciatics. Second joint of second toe, left foot, swollen, red and tender; also metatarsal phalangeal joint of great toe, with edema of dorsum of foot. Urethral discharge, which contains gonococci. perineal tenderness. Urine smoky; specific gravity 1.019; albumin one-fifth per cent.; considerable sediment, much normal and abnormal blood, pus-cells, caudate cells, a few hyaline and granular casts, no bladder epithelium. Temperature at entrance 102.8°.

The temperature continued high, rising to 104° on the second day. The spleen became larger. Patient had a good deal of pain in sacrum and right hip.

On the fourth day right knee tender and painful. Next day boggy and swollen, and a culture was taken

from the blood.

On the third day after, several small colonies appeared upon the media. The colonies had a slightly yellowish tinge; did not tend to spread. Transferred to agar, blood-serum and gelatine media, they failed to reproduce. Transferred to acid gelatine, they reproduced. The organisms composing the colonies were biscuit-shaped diplococci, resembling the gonococcus of Neisser in morphology and reaction to staining reagents.

The signs of general infection in the patient continued. The temperature remained between 101° and 103°. The spleen could be felt enlarged. The right wrist-joint became tender and swollen; then the right shoulder, the left hip, the left knee. The knee-joint was much swollen, the patella floating. In other joints,

swelling not extensive.

September 5th. The left eye became inflamed, and a keratitis set up. The left wrist painful and swollen. September 17th. The above-mentioned joints all

still somewhat swollen and tender and very stiff. Right eye became injected, and keratitis set in.

October 1st. No acute joints present. Knees and wrists still swollen and stiff. Urethral discharge still present. Temperature between 99° and 101°.

Cultures were taken from the blood on August 25th (as described), on August 30th, September 4th, 8th and 20th. Upon all occasions except the last, colonies were obtained similar to those described in the account of the first culture taken August 24th. colonies of August 30th were reproduced to the fourth generation, and this growth inoculated to the vaginal mucous membrane of a bitch. Thirty-six hours later a thin, puriform discharge was visible at the vaginal orifice and upon the mucous membrane. A bacteriological examination of this discharge revealed the presence in it of the biscuit-shaped diplococcus, both within and without the pus-cells. Distinct colonies of the diplococcus were also obtained by culture from the dis-A second inoculation was made from the fourth generation of the culture of September 4th upon the urethral mucous membrane of a bitch, with a simi-The inoculation in both trials was made lar result. by smearing the membrane. Cultures were taken on several occasions from the discharge from the eyes during the keratitis, and no diplococci were grown, nor were they found on slides made from the pus.

The marked feature of these two cases in which organisms have been found is the prominence of the signs of general infection and constitutional disturbance. The condition in both cases was distinctly typhoidal; in fact, the second case was at first considered to be typhoid. The spleen was distinctly enlarged in the second case. The range of temperature was much higher than is usual in gonorrheal rheumatism. In fifty-three cases of this affection at the Massachusetts General Hospital, of which I have examined the records, the temperature reached 103° in but four, and the average of the maximum temperatures of all cases was 101°; while in these reported cases the temperature reached 103° and 104° respectively, and remained between 101° and 103° for a

week at a time.

Reports of Societies.

CLINICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

HENRY JACKSON, M.D., SECRETARY.

REGULAR Meeting, Wednesday, October 17, 1894, Dr. F. C. Shattuck in the chair.

Dr. C. G. Cumston read a paper on

THE TREATMENT OF THE SO-CALLED INCURABLE PURULENT PLEURISIES, BY PROFESSOR REVILLIOD'S METHOD.¹

DR. VICKERY: Does that long tube stay full of liquid all the time and so exert a constant siphonage, or is the main pull by means of the bulb. I should think a priori that in a great many cases there would be leakage enough of air round the tube in the purulent chest so that the long column of fluid would not be sustained throughout the twenty-four hours.

DR. CUMSTON: Once the tube inserted and the adhesive plaster applied, I have always found that it closed hermetically around the tube. The suction is entirely produced by the bulb, the strength of which is governed by the height of the incision above the flask, according to physical law.

DR. C. P. PUTNAM: I should like to know if, when

¹ See page 502 of the Journal.

the tube is taken out, there is, as a matter of fact, a rush of sufficient fluid to show that the tube has been filled in ordinary cases. Does the tube collapse at all?

Dr. Cumston: The tube does not collapse. It is

all the time filled with a column of liquid.

DR. V. Y. BOWDITCH: The results are certainly striking, and it seems a pity that we have not the records of the other cases of Professor Revilliod. Have they been published?

DR. CUMSTON: Some of them have been published in different theses, but the literature is very scattered.

Dr. Bowditch: I can speak from observation of one case only which occurred when I was house-officer in the Massachusetts General Hospital. The tube went from the interior of the pleural sac down into a bottle of water. The results were not more striking than in the ordinary cases of drainage. Personally I have grown to feel more and more in favor of resection of ribs being made soon after the first permanent opening is made, if the amount of pus does not decrease comparatively rapidly.

DR. F. C. SHATTUCK: In the case where there was left-sided effusion with great dislocation of the heart to the right, the third case I think, did the heart re-

turn to its proper place?

Dr. Cumston: It did. All the conditions returned to the normal, and the disparity between the two sides

of the chest was a good deal equalized.

DR. SHATTUCK: It seems to me that cases early recognized and promptly treated by free incision yield good and prompt results. Long-standing cases filter through the out-patient department into the wards and are sometimes very rebellious, probably by reason of the lack of early surgical interference; just in these cases the method of Revilliod may be of much value. We see cases where the ribs are so closely approximated that it is difficult even to get a trocar in between them for exploratory puncture. I do not see how in such cases this tube is kept pervious. I should think it would be squeezed between the ribs and the siphon action would be lost.

Dr. Cumston: I have no such case on record, and am unable to reply. I regret to say that in the cases I have reported to-night no bacteriological examination has been made.

Dr. R. C. Cabot read a paper on

ACUTE LEUKEMIA.2

DR. J. J. THOMAS: Dr. Cabot's criticism applies to almost all cases of leukemia. For a long time almost every man was satisfied to call that case leukemia in which he found increase of white corpuscles; the chief point seemed to be as to how many were necessary to call the case leukemia. The discovery of abnormal white cells in leukemic blood (I think Ehrlich first clearly described them, though Uthemann first called them myelocytes) gave a more definite and positive ground on which to base the diagnosis; and I think without the differential count and the presence of these cells not found in normal blood we are not justified in taking a case as proven. A man may be mistaken in his diagnosis, but the chances are that in a large proportion of the cases the diagnosis is correct. Certainly it is in regard to chronic leukemia, and probably in regard to many of the cases reported as acute leukemia, where the proof is incomplete. Where the presumption is that a certain number of the reported cases are

³ See page 507 of the Journal.

really cases of acute leukemia, I think that the existence of three undoubted cases would certainly establish the existence of the disease. However, I think that a great many of them are cases that have gone on some time, where the existence of leukemia has not been suspected. We do not count the blood of people who come to us in health. About two years ago I saw a case of lymphatic leukemia where the increase of white corpuscies was about 30,000: I have forgotten the proportion of white to red. I saw the case a year afterwards, and the white corpuscles had diminished to about 20,000. Of that fully 90 per cent. were small lymphocytes, which I think justifies the diagnosis of lymphatic leukemia. Certainly any one examining that blood with the microscope without a differential count of the white cells, at the time I saw it last, would be apt to call it normal, and yet it was not. Again, if a person has abnormal blood-cells in the blood are we not justified in calling it acute leukemia if the white corpuscles rapidly increase and death soon takes place?

DR. SHATTUCK: Two cases come into my mind: one I suppose must be thrown out as a case of acute leukemia because all the postulates are not fulfilled. The case was that of a child six or seven years old whom I saw some years ago with the late Dr. Dow, of Somerville. As far as symptoms went, the duration of the disease was five or six weeks. I saw the child shortly before its death. The spleen was enormous, and there were hemorrhages from various sources. Dr. W. S. Thayer, of the Johns Hopkins, examined the blood, and pronounced it a typical case of lymphatic leukemia. I think there can be no question as to the diagnosis; the only question is as to the duration. Another case illustrates very well Dr. Cabot's remark as to the latency of some cases. I was associated last winter in the care of a gentleman of about forty-five who had had a very severe typhoid fever some ten years before. Since then there had been some enlarged glands in the neck, but the health had been good, though not as vigorous as before. He had attended to his business, and when he was taken down he was thought to be looking remarkably well, thought to be better than for some years. It was supposed that this extremely severe typhoid fever, in which indeed he had Cheyne-Stokes respiration some days, had never been fully recovered from. But within about a year of his death he had taken a life-insurance policy for \$25,000 in a first-rate company. Last winter he was taken down with the grip, was stricken down with the utmost suddenness, and had to be carried home. I saw him after that a number of times up to his death. There were enlarged cervical and axillary glands and moderate enlargement of the spleen. Dr. Cabot examined the blood, and established the presence of true leukemia. He died of a general pneumococcus infection, - primary in the right upper lobe, secondary in the endocardium and cerebral meninges. The autopsy was by Dr. Councilman. Undoubtedly, this man was suffering from leukemia, probably for several years. If he had not got the grip with the pneumococcus infection, there is no knowing how many years he might have lived, because he was apparently on the up-grade, so that practically his leukemia was discovered accidentally. This case may be reported in full at a later date.

DR. G. M. GARLAND was unanimously elected chairman for the two ensuing years. A vote of thanks to DR. SHATTUCK was passed, expressing appreciation of the great interest he had taken in the Section.

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THE MICROBIOLOGY OF MENINGITIS.

THE number of "idiopathic," "simple" inflammations is becoming more and more restricted, and as it is regarded as doubtful whether "idiopathic" peritonitis or pleurisy exists, so idiopathic and simple meningitis seems likely to become a thing of the past, the tendency being to regard these serous inflammations as always septic and infectious.

The sixth and last volume, just published, of the new "Traité de Médecine" (planned by the late Charcot and carried out largely under his supervision) treats of the meningites entirely from the standpoint of bacteriology. It knows no such entity as "simple" meningitis.

First, the distinction of arachnitis and leptomeningitis is no longer maintained. The pia mater, arachnoid, sub-arachnoid cellular tissue, as well as the surfaces of the ependyma, and sometimes even the dura mater participate simultaneously in the inflammatory process which constitutes meningitis.

Second, it is affirmed that just as there is no longer an endocarditis but endocardites, as there is no longer one pleurisy but many pleurisies, so the term meningitis is the genus which includes many meningites, all different inflammations caused by different microbes. Doubtless these divers bacteria, with shades of difference, produce nearly the same effect - the same morbid process, so that it is not vet possible clinically to differentiate the specific forms and to classify them according to their parasitic cause. At the same time, the meningeal inflammation which is caused by Koch's bacillus of tuberculosis is anatomically distinguished by the existence of the tuberculous neoplasia, and clinically by its subscute course and its evolution. constitutes, then, a clinical type which it is proper to separate from the group of acute meningites formerly designated, by reason of the absence of tubercles, as simple meningitis. The labors of Netter, Frankel

Sänger, Weichselbaum, etc., have largely established the infectious nature of the meningites not tuberculous, and set forth the rôle played by a certain number of microbes in the development of the disease.

The brain and its membranes are exceptionally well protected against infection from the outside, and an infection cannot take place directly without previous lesions of the organism. Either the pathogenic agents must be brought in contact with the meninges by effraction (as through a penetrating wound of the cranium), or by direct propagation from a neighboring inflammation, or by the indirect transport through the blood or lymph channels of the agents of a general infection, or of a local infection more or less distant.

The most simple mode of infection is that which results from a direct inoculation of the meninges. A traumatism opens the way to infectious germs from the exterior. Cases have indeed been reported where the meningitis succeeded a simple contusion, unaccompanied by wound; the explanation then would be that the traumatism caused the meningitis "by playing the rôle of a provocative agent and making of the meninges a locus minoris resistentice for an infection of unknown source." The bacterium may be the pneumococcus (ordinarily a harmless inhabitant of the mouth and pharynx), the colon-bacillus, the bacillus tuberculosis, the streptococcus, etc. Infection by contiguity is exemplified in meningitis by propagation from a phlegmon, a carbuncle, an erysipelas of the hairy scalp; syphilitic or tuberculous osteitis of the bones of the cranium; furuncles of the nose and lips by causing phlebites of the sinuses of the dura mater; furuncles and abscesses of the ear, otitis externa, media, and interna, mastoiditis; osteo-periostites and phlegmon of the orbit and opthalmites (the mode of propagation being the optic foramen); acute and chronic corysa, the ulcerous lesions of ozena (the propagation being by the cribriform plate of the ethmoid bone). Otitis media is perhaps the most common lesion, the meningites developing from caries of the petrous.

Any infection, no matter what may be its seat, may give origin to a meningitis, the microbe being carried from the distant focus to the brain by the blood stream. The meningitis may thus make its appearance in the course of a septicemic malady and complicate a puerperal infection, a pyemia, an ulcerous endocarditis, etc. The dominant microbe is the streptococcus. Fränkel and Krause were the first to notice it in the exudate fluid of the meninges and in the inflamed membranes in a number of cases supervening during puerperal septicemia.

Meningitis may be a complication or sequel of cholera, small-pox, scarlatina, dysentery, recurrent fever, typhus fever, measles, influenza and typhoid fever, the specific infection of those diseases being presumably the cause. In small pox, measles and the grippe it often follows suppurative otitis. In typhoid fever, the meningitis may be due to a secondary infection by the colon-bacillus, but it may have for its cause the typhoid bacillus itself.

¹ Traité de Médecine, tome vi, G. Masson, Paris, November, 1894.

But the far greater number of cases of meningitis are due to infection by the pneumococcus. Netter, Leyden, Sänger, Weichselbaum and others have reported numerous typical cases where the presence of the pneumococcus was noted in the meningeal exudate; their observations have been confirmed by Neumann and Schoeffer, Ortmann, Runeberg, Ranvers, Bozzolo and Monte.

The pneumococcus infection of the meninges may supervene in the course of the pneumonia; it may follow a pneumococcus lesion of an organ in the vicinity of the brain (as of the nares, ears); it may be primary and spontaneous in appearance, independent of any previous pneumococcus lesion. In the latter case, it is sporadic or epidemic. The meningitis may be one of the local manifestations of the pneumonic septicemia, like the purulent pleurisy, the endocarditis, the pericarditis, which precedes or coexists with it. Out of thirty cases of meningitis not preceded by pneumonia, Netter found sixteen that were clearly due to the pneumococcus. Meningitis occurs in the course of pneumonia once in every two hundred cases (Guinon). Under certain circumstances pneumococcusmeningitis takes on an epidemic character, and constitutes that fearful disease known as epidemic cerebrospinal meningitis. Netter was the first to affirm the pneumococcus nature of this disease. This thesis is supported by numerous lines of proof: the simultaneous outbreak of epidemics of pneumonia and cerebrospinal meningitis; coincidence of the two affections: symptomatic and anatomo-pathologic identity of sporadic pneumococcus meningites and epidemic meningites. The bacteriological verification has been furnished in a certain number of cases by Leichtenstein, in the course of an epidemic observed at Cologne, by Foa and Bozdoni, by Uffreduzzi in the course of an epidemic in the city of Turin in 1885-1886, and by Bonome.

Staphylococcus meningitis appears to be extremely rare, the only case yet published is that of Galippe; here the golden pyogenic staphylococcus seemed to be the only pathogenic agent present.

Space does not allow us to follow this subject in all the interesting phases of the bacilli and cocci, classified and unclassified, that have been found in the exudates of acute meningitis. The pneumo bacillus of Friedländer, the colon-bacillus and the typhoid bacillus seem to have been the cause of several cases of suppurative meningitis.

Those who may wish to investigate still further the questions here raised will find much very valuable information in the chapter on Meningeal Diseases by Georges Guinon in the work which we have already cited.

The direction in which modern pathology is developing makes it probable that we shall before long be called upon to consider the propriety of a change in medical terminology. A pulmonary pneumococcosis will take the place of a pneumonia, and a meningeal streptoccosis of an acute meningitis.

A DANGEROUS KNOCK-OUT BLOW.

The death of the sparring partner of a well-known prize-fighter, at Syracuse, N. Y., last week, from the effects of a knock-out blow upon the point of the jaw, recalls the sad accident which occurred at Harvard College last year during a friendly sparring bout and resulted in the death of a student. In that case, a full account of which was given in the Journal for March, 1894, death was found to be due to rupture of the lateral sinus, the shock of the blow having been directly transmitted to that structure through the condyle of the jaw, and the petrous portion of the temporal bone.

As death in the Syracuse case has been reported to be due to cerebral hemorrhage, and the nature of the blow was the same in both cases, the result of an autopsy in the Syracuse case would be extremely interesting.

The blow upon the point of the jaw has from time immemorial been known as par excellence the knock-out blow, presumably owing to the number of times it has been successful in producing temporary unconsciousness in an opponent.

The stunning qualities of this blow may be very likely due to the close relation of the condyle of the jaw with the petrous portion of the temporal bone, containing as it does the delicate structures and elaborate nervous mechanism of the ear and the semicircular canals; perhaps also to the close relation to the great vessels and nerves at the base of the brain, and even to the pons and medulla.

But since, as proven by the Cambridge case and at least suggested by the recent case at Syracuse, fatal cerebral hemorrhage may result from the blow upon the point of the jaw, causing a "knock-out" of unpleasantly long continuance, it would seem better in the long run to avoid its infliction, especially in friendly sparring bouts.

The loss of one or more prize-fighters by accidental injuries received in the exhibition of their professional attainments could perhaps be borne by the community; but if many cases like that of the Harvard student are laid at the door of sparring as a pastime, the pastime had better be abolished in favor of football or some other perfectly safe form of sport!

THE PHYSICIAN AS TRADESMAN.

FORMERLY there were three "learned professions"; then other pursuits made claims to stand on a parity with these, both as professions and as learned; more lately all pursuits have been styled in the vernacular professions and all their followers professors; and, last of all, comes the period when no pursuits are professions and no men are learned. All occupations become trades and all men tradesmen. A contributor this week of a paper entitled "The Commercialization of Medicine; or, the Physician as Tradesman," evidently

thinks that this last period has been entered upon, at least in this country.

Although we cannot accept his position in its entirety as applied at any rate to the Eastern States, there is evidently a considerable measure of truth in his forecast of a hard and unpicturesque reality. The times have changed and are changing; we have changed and are changing with them. It is inevitable, and the newer the country the greater the change. Whether human existence is gaining or losing remains to be seen; but life presents less individualism, less repose of thought or action, less of the picturesque and the mellow. Every one has all kinds of fruit at all seasons, picked before it is ripe, that it may be rushed to the best market by rail or steamship, and cold storage does the rest.

The profession of medicine and the physician have undergone the change along with all else, and must continue to march with the music. We think that comercialization has affected the physician as little in Boston and New England as anywhere in the United States, but it must be granted that our doctor of today is no more like his predecessor of fifty years ago than is our modern "merchant" like his predecessor in the palmy days of the old China trade.

Even in the laboratory "business methods" are very desirable, and in the field of practice the doctor without them is heavily handicapped. The practising physician must know how to handle his contemporary men and women as they are accustomed to being handled in other relations of life, in order to get patients; and how to "turn off" his clients in a thoroughly business-like fashion, in order to get more than he can properly attend to.

We are led to believe that the remarks of Prof. W. S. Chaplin of St. Louis, at the dinner of the Harvard Medical Alumni Association in June, 1893, were not so wide of the mark as the outraged protestants in the Western press a year later would wish to indicate. And the "Model Surgical Clinic" lately depicted in the Journal (August 23, 1894) has been so extensively copied that it evidently appeals to the general sense of the possible. That medical editors should be banqueted by drug manufacturers (at an annual reunion) does not seem to shock every one's sentiment of the fitness of things.

Trade and collectivism have made and will make their mark upon the medical profession; but its days as a profession based upon learning are not quite yet numbered, and the personal equation will still continue to be a large factor in its practice.

MEDICAL NOTES.

THE MANUFACTURE OF DIPHTHERIA ANTITOXIN AT MUNICH. — The Laboratory at Munich is unable, at least for the present, to keep up with the demands made upon it for the production of antitoxin, and there is no prospect of a regular output before January,

treatment is at present thirty-two, and it is said that they become fully immune in not less than six to fifteen months. Efforts are being constantly made to increase the strength of the serum.

ANECDOTE OF SIR WILLIAM GULL. - Sir George Johnson tells the editor of the British Medical Journal, that Sir William Gull, whom he met at Eastbourne shortly before his death, said to him, "You know the true translation of Γνωθι σεαυτόν is, "Test your urine." The editor remarks that it would be interesting to know whether this had been done within a year or two in the case of the late Czar. The following note from Le Progrès Médical for November gives an answer which is interesting, if true:

THE CZAR'S ILLNESS. - The medical profession of St. Petersburg, according to Le Temps, accuses Professor Zacharin of having neglected to ascertain the state of the late Czar's kidneys after his attack of influenza of last year. The surgeon of the imperial yacht Polar Star, while the imperial family were cruising last year along the coast of Finland, noticed that the Czar had edema of the face. He secretly secured a specimen of his majesty's urine from a servant, analyzed it, and found evidence of advanced disease of the kidneys. He informed the court physician, Dr. Hirsch, of his discovery, and the latter having confirmed the diagnosis by his own examination, ordered immediate return to dry land, and residence in a dry climate.

Surgical Interference in Perforative Ulcer OF THE STOMACH. - In the editorial published in last week's JOURNAL, on "Immediate Surgical Interference in Cases of Perforation of the Stomach by Ulcer," a case reported by Dr. Robert F. Weir, of New York, in an excellent article on the subject in the International Medical Magazine, for February, 1892, should have been mentioned. In this case, which was one of general perforative peritonitis, the opening in the stomach was closed by sutures, the patient surviving the operation only a few hours. An unsuccessful case operated on by Mouisset in 1890 has also been reported in the Lyon Médicale.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. -- During the week ending at noon, November 21, 1894, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 147, scarlet fever 55, measles 33, typhoid

DIPHTHERIA IN QUINCY, MASS. - The Coddington School at Quincy, Mass., numbering five hundred pupils, has been closed on account of the prevalence of diphtheria. There have been already two deaths among the scholars, and one of the teachers is now ill.

THE TYPHOID EPIDEMIC AT WESLEYAN UNI-VERSITY. — It has now been definitely ascertained that the cases of typhoid fever at Wesleyan University were due to infected oysters. The oysters were placed in a fattening-bed in the Quinnipiac River close to the house of a dealer, in which there were two cases of typhoid fever. The drain from the house emptied into the river close to the oyster bed. According to Dr. Charles H. Lindsley of the Connecticut State Board of Health, the Wesleyan cases arise from this The number of horses which are now under source beyond the shadow of a doubt.

THE ANNUAL REPORT OF THE MASSACHUSETTS BOARD OF REGISTRATION IN PHARMACY, presented within the last week, shows that out of 661 applicants examined during the last year, only 126 passed the examinations, or 19 per cent. Of the applicants during the previous year 24 per cent. passed. During the year about 150 complaints of violations of the pharmacy law have been received. Seven certificates have been revoked; four have been suspended.

THE NEW HAMPSHIRE HOSPITAL ASSOCIATION .-The annual meeting of the New Hampshire Hospital Association was held at Concord, N. H., November 15th, with delegates present from Portsmouth, Manchester, Dover, Keene, Claremont and Concord. Dr. C. F. Towne read an interesting paper on "The Relation of the Citizens to the Hospitals." This was followed by a general discussion of hospital needs. The next session will be held in Portsmouth in May.

NEW YORK.

SMALL-POX INCREASING. - Since the advent of cool weather there has been a somewhat notable increase of cases of small-pox in the city. During the past week, on one day fourteen new cases were reported; on another, ten cases; and on a third, eight cases. A considerable number of these recent cases were traceable to an outbreak of the disease in West 39th Street a few weeks ago. On November 13th Dr. Doty, Chief of the Bureau of Contagious Diseases, reported that during the past two months 45 cases had been reported, and that of these no less than 32 came from the 39th Street district, where the first person to suffer from small-pox was a grocer with a shop in the basement of a tenement-house.

N. Y. STATE ASSOCIATION OF MILITARY SUR-GEONS. - At the annual meeting of the New York State Association of Military Surgeons, which was held in the building of the Academy of Medicine on November 15th, the following officers were elected: President, Dr. R. S. Harnden, of Waverly; First Vice-President, Dr. C. S. Parkhill, of Hornellsville; Second Vice-President, Dr. J. A. Van Duyn, of Syracuse; Secretary, Dr. C. E. Herrick, of Troy; and Treasurer, Dr. J. F. Valentine, of Brooklyn.

DR. GIBBONS'S RESUSCITATION TEST. - Dr. P. J. Gibbons, of Syracuse, will not be able to make his resuscitation test in the case of the murderer Wilson at present, as an appeal has been made for a new trial and the electrocution has been necessarily postponed. In connection with this interesting matter the question has arisen whether the Governor has the legal right to sanction such a test; but in a dispatch from Albany dated November 16th, it is stated that the Attorney General of the State has informally expressed the opinion that if the relatives of the criminal consent there is nothing in the laws to prevent the experiments being made. Among those who have given expression to their doubts as to whether the interrupted current as applied in the electrocution of criminals really destroys life, are the well-known electrical experts, there is nothing in the laws to prevent the experiments

Drs. Wm. J. Morton and Augustin H. Goelet, the latter of whom published an article in the Electrical World of September 8th, entitled, "How to Deal with Apparent Death from Electrical Shock." Dr. Morton has given the following opinion: "Since the beginning I have agreed that there is no positive proof that any criminal claimed to have been killed by electricity has actually been so killed. The burden of proof has alwavs rested on those who claim that he was killed. . . . It is a case of Scotch verdict — not proven. There is but one way to prove that a man has been killed by electricity, and that is to lay the body aside in a convenient room and wait for the signs of chemical decomposition. But to take a subject warm from the electrical chair and within an hour or so to cut him up is, in my opinion, simply a prostitution of science. It is a pollution of the true sources of knowledge. . . . As I recollect the official report concerning the microscopical changes found upon examination in the bodies of the criminals executed by electricity, it shows that in no one case has there been found any evidence of structural change in the tissues, except as to mere superficial burns produced by contact of the electrode with the skin."

Correspondence.

BERLIN LETTER. THE NEW TREATMENT FOR DIPHTHERIA.

BERLIN, November 2, 1894.

MR. EDITOR: - The new treatment of diphtheria by means of blood serum obtained from animals previously rendered immune is just now attracting so much attention that a cursory account of what I have seen of this treatment during the short time I have been in Berlin may be of interest. At the risk of repeating what may already be well known, I shall first hastily run over the method of preparing this Heilserum, as the Germans call it, and the way it is administered to the patient.

If an animal be given repeated doses of a poison which, while making the animal ill, are not sufficient to cause death, an immunity may gradually be developed which will enable the animal to withstand, without bad effects, doses of the poison that would kill a normal individual. We see this in the case of certain poisons obtained from plants.

Opium is a good example. Behring showed it to be true also of poisons produced by bacteria. As the bacterial poison is thrown into the blood of an infected animal, the tissues offset it by producing a kind of antidote which will neutralize the poison. To this antidote is given the name antitoxin. In the new treatment for diphtheria this antitoxin, instead of being made in the body of the patient, is made in the body of an animal, such as a horse or sheep, and then injected into the patient. By these means is avoided the delay between the time when the poison is given off by the bacteria and the time when the tissues can produce the neutralizing antitoxin — a delay during which fatal damage may be done to the body. The antitoxin for the treatment of diphtheria is produced as follows:

A healthy animal, preferably a horse on account of its large size, is selected, and doses of the diphtheritic poison.

are repeatedly injected under the skin. The dose must be large enough to make the animal ill without endangering its life. As the process goes on, the animal gradually develops an immunity. That is to say, antitoxins are formed in the body which counteract the effect of the diphtheritic poison. It may take only a few weeks, or it may require months, to bring an animal to a condition of immunity. That depends on the peculiarities of the animal. To determine whether or not a proper immunity has been attained, small amounts of blood are from time to time withdrawn from the body and tested. This is done by mixing in a vessel a definite amount of the blood with diphtheritic poison of known strength and of an amount, say ten times as great as is necessary to kill a guinea-pig in two days. The mixture is then injected subcutaneously into a guineapig. If the animal shows no ill effects, we know the antitoxin to be present in the horse's blood in very considerable quantity. If, however, the guinea-pig, while not dying in two days, nevertheless succumbs after a week, we know the antitoxin to be present in relatively small amount, and we may continue to administer to the horse the diphtheritic poison till a subsequent test shows the blood to contain the antitoxin in proper amount.

When this condition is reached, a considerable though not fatal amount of blood is withdrawn from the horse into sterile vessel and set aside in an ice-chest. After the blood has clotted, the clear serum is decanted off, 0.5 per cent. carbolic acid added to keep it from decomposing,8

and we have the Heilserum ready for use.4

The amount of serum to be given in a case of diphtheria will depend on its strength, which, as we have seen, is de-termined only by experiment. In the Berlin Institution for Infectious Diseases a serum is used of such strength that 15 cm. suffice for a child of ten years. The serum is introduced subcutaneously. A portion of skin in the axillary line, about the level of the sixth rib, is thoroughly cleansed. Then with a clean syringe 15 cm. are injected under the skin into the loose areolar tissue. The needle is withdrawn and a piece of clean cotton is put over the punct-ure wound and secured with collodion. At the spot where the injection was made will be an elevation, from the presence of the serum, as big, perhaps, as the half of a hen's egg. This, however, soon disappears as the serum is absorbed. I happened to be present to-day when a new case was brought in, and saw the process of administering the serum. It must be added that the immunity gained from this treatment lasts, according to Kossel, only a few weeks, or at most, according to Ehrlich, two months. A child, therefore, that has been made immune during one epidemic of diphtheria may become a victim in the next, unless it is again treated.

I saw twenty cases of diphtheria yesterday in the Institution for Infectious Diseases, all being treated by the new method. Dr. Kossel, the physician in charge, explained each case, and allowed us to look into the throats, examine the temperature charts, and make whatever examinations of the patients we chose. The thing that first struck me on entering the wards was the absence of anything like illness in the looks of the little patients. They were, most of them, sitting up in their cribs playing with blocks and talking away in German as though they had never been sick a day. Each child had a diminutive wine bottle holding perhaps half a pint. These the children used as playthings and when they felt like it they drew out the cork and took a sip of wine. The bottles were always kept partly filled, and the children allowed to drink as much as they pleased.

Although the patients felt so well, many of them presented s) mptoms which would ordinarily be regarded as very alarming. In one child, for example, that I have in mind, the diphtheritic membrane involved not only both tonsils and the uvula but extended into both nostrils. Another child had diphtheritic laryngitis so it could not speak. The mother of this child was anxious to nurse it at home. Kossel, therefore, allowed her to take it away in spite of

In a cool, dark place the serum will keep at least several months—how much longer is not known.
4 The serum is made according to the directions of Behring and Ehrlich by the firm Lucius and Bruening, Höchst, a. M. Germany.

the persistence of the laryngitis. He regarded the case as practically out of danger

One case in a little girl of four years showed a nearly healed tracheotomy wound. This child was, moreover, also tubercular, as shown by its prompt reaction to an injection of tuberculin. The prognosis in a case of diphtheria occurring in a tubercular patient is looked upon as very grave. Yet this child, when the diphtheritic membrane was so extensive as to necessitate tracheotomy, made a good

recovery

I will give a few notes on the first case I saw under the new treatment. They were taken from Dr. Kossel's remarks on the case and from the temperature chart, as well as from what I saw of the child on my two visits. The patient was a girl of five years. She was brought to the hospital October 25th at 2 P. M. She had been apparently well up to within twenty-four hours of her entrance, so that the case may be regarded as one of the first day. At the time of her entrance both tonsils were covered with diphtheritic membrane. The temperature was 103.8°. At 10 P. M., that is, eight hours after entrance, an injection of the serum was given. The temperature continued to rise till midnight, when it was 104.6°. It then dropped by crisis so that by 4 A. M. of the 26th it was 103°, by noon 100.4°, by midnight 99°. I saw the child about 11 A. M. on the 27th, and looked into her throat. She had then a temperature of 99.4° and was feeling perfectly well, although both tonsils were still largely covered with membrane. To-day, Sunday, the 28th, I again saw her, that is, three days after her admission to the hospital, and in the fourth day of the disease. There was a necrotic-looking patch not larger than a split-pea still left on one tonsil. Aside from that no membrane was to be seen. I examined her throat both times I saw her and noted carefully the extent of the mem-

This fall of temperature by crisis shown in the above case is typical for cases treated in the first two or three days of the disease, that is, before complications like otitis media, pneumonia, infection of the lymph-glands, etc., have set in. In older cases with complications the temperature

rill depend on the secondary affection.

Dr. Kossel, in the Deutsche Medicinische Wochenschrift for October 25th, states that in the Berlin Institution for Infectious Diseases no case of diphtheria has died where the patient was received in the first or second day of the disease. I heard him say to-day that he had himself treated some eighty cases and had not lost a single one where the treatment was begun in the first four days of the disease.

The Heilserum also offers a means of diagnosis in doubtful cases where the question of diphtheria arises. If, for example, a child is taken with sore throat accompanied by fever, it may be impossible to determine clinically whether or not we have to do with a case of diphtheria. An injection of the serum will, if the case be really one of diphtheria, cause the temperature to fall practically to the normal inside of twenty-four hours. On the other hand, if the sore throat and fever remain uninfluenced for twelve hours or more after the administration of the serum, we may safely assume that the case is not one of genuine diphthe-

At the Institution for Infectious Diseases every suspected case is treated as though it were one of real diphtheria, and the patient left in the same wards with the established cases. No bad results follow. If the patient really had diphtheria the fact is shown by the marked improvement that follows. If it happened to be a simple sore throat the case runs its usual course, the blood serum preventing any

infection from neighboring cases.

Dr. Kossel told of three children that were brought to the hospital from one family. Only one child had diphthe-The other two were brought because they had been exposed to the disease. One of these two had a somewhat rapid pulse, but aside from that showed no signs of being unwell. Because of the rapid pulse the child received an injection of the Heilserum, as did the one with the well-marked disease. The third child was apparently perfectly well, and, as a kind of control experiment, was left untreated. The next morning the one with the rapid pulse showed a perfectly normal condition, while the one which had been well and received no treatment had developed

into a typical case of diphtheria.

From what I have seen and heard in the past week I am encouraged to believe that in a few months the physician will have at his disposal the means for curing practically all cases of diphtheria that come under his care within the first two or three days from the onset of the disease. One of the most frightful affections of childhood will thus be stripped of its terrors, and another disease be added to the small list than can be cured by the internal administration of medicine.

Very truly yours,

C. A. EWALD, M.D.

CONGENITAL DISLOCATIONS OF THE HIP.

EVERETT, MASS., November 10, 1894. Mr. Editor: — In a paper by Dr. E. H. Bradford, he describes a new mode of restoring congenital dislocations of the hip. His method requires division of the parts, making a rather severe flesh wound, and from his own account, is not very successful in restoring the head of the femur to

its proper place in the acetabulum.

Permit me to call attention to some facts that I have discovered and published some years since, namely, that all of the soft parts can be elongated to any extent necessary by continued, uninterrupted extension, not by stretching them, but by their elongation by new material. This mode secures the proper lengthening of all the soft parts about the dislocated joint, including the capsular ligament. This result cannot be secured by fixing the limb, but it must be by a constant tension of the parts that it is designed to elongate. I wish to make this distinctly understood, that it is positively necessary that there be a constant tension of the parts we desire to lengthen. Where this process has been adopted, I have never known it to fail of elongating the surroundings of a joint sufficiently to bring the limb into its place without any force.



The principle is to weary the muscles by an unremitting pulling. This does not require a great force. I think my heaviest weight was only seven or eight pounds. In young children very much less was needed, say three pounds. This result appears philosophical, when we consider that the new material is received by the parts in a liquid state, and when organized, cannot be as tense as the old tissues. Then it can be ascertained if the head of the bone is in the

¹ Annals of Surgery, August, 1894.

acetabulum, by carrying the femur up. If it is in its place, the trochanter will be thrown out from the body, the depth of the rim of the acetabulum and the condition of the latter can be well ascertained, particularly if it is filled up. limbs should be kept in this position until the parts about the joint have all become conformed to their position.

The cut gives the appearance of an interesting case that came under my care. The boy was about four years of age, had infantile paralysis of both limbs; there was dislocation of both femurs, one was upon the dorsum of the ilium, the other forward and down in the thyroid foramen. I applied extension by means of a weight and pulley. After a few weeks, it was found that the one displaced upwards could be brought down to its place, the other required some force to carry it over the edge of the pelvis, when it was readily brought into place, where it remained. The other was secured in its place by my splint, which, it will be recollected, has an inelastic band to prevent the limb being thrust up by the weight of the body or other force.

Very truly yours, HENRY G. DAVIS, M.D.

IS THE EMERGENCY HOSPITAL A CHARITABLE INSTITUTION?

Boston, November 16, 1894.

MR. EDITOR: —The following case has recently come under my notice. A surgeon from the Emergency Hospital was called to attend a poor woman in the neighborhood of that institution who was flowing severely, so that it was necessary to send for the nearest aid. The surgeon conducted the miscarriage, for such it proved to be, successfully, packed the vagina, and, according to the statement of the woman's husband, charged five dollars for his services. As the man had no more money, the case was then referred to the district physician of the Boston Dispensary for the necessary after-treatment.

Before hearing of this case I had been led to believe that the Emergency Hospital was a charitable institution, but as I am now naturally in some doubt about the matter, I would like very much to get your opinion as to whether it is so considered.

Very truly yours,

DISTRICT PHYSICIAN.

A WORD FROM OLDERTOWN.

OLDERTOWN, November 17, 1894.
RESPECTED "1846":—Oh, that you had, forty years or so ago, come boldly forward in support of those of us who bravely, if not effectually, were trying to enforce such doctrines as are promulgated in your latest letter from Oldtown in this week's JOURNAL; but better late than never macte virtute.

Much is still wanting. Professor Cheever is said to have given some timely and much-needed hints thereon in his last Thursday evening's lecture at the Harvard Medical School. Let others follow.

Responsively yours, C., SENIOR.

THE ROARING-BOX HUMANA.

SMITHSBURG, MD., November 14, 1894. MR. EDITOR: — The description in your last issue, of the peculiar anatomy of the gorilla with its air reservoir, recalls a story told by my mother. A colored boy in the family of her sunt, by whom she was brought up, had such an air bag which he could fill at will. He would breathe it full and then produce the most delightful musical sounds, soft and continuous like those of a church organ. The bladder, as she called it, was located in front of the throat above the clavicles and would swell out even with the chin.

Very truly yours, E. TRACY BISHOP, M.D.

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METEOROLOGICAL RECORD.

For the week ending November 10th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:-

	Baro- meter		Thermon- eter.			elati midi					Velocity of wind.		We'th'r.	
Date.	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 Р. М.	8.00 A. M.	8.00 P. M.	R.00 A. M.	8.00 P. M.	Rainfall in inches
S 4	29.88	46	50	43	60		5-		w.	8	4	C.	C.	_
M 5	29.64	45	50	40	71			E.	N.E.	16	27	0.	R.	.60
T 6	29.67	33	35	31	95			N.W.	W.	24	13	T.	C.	.90
W 7	30.00	32	38	27	62		60		W.	18	8	0.	F.	
T 8		30	33	27	64		79		N.	5	12	0.	N.	.29
F 9	30.00	32	34	29	91	100	96		N.	14	10	0.	R.	.05
S10	29.83	38	42	33	95	66	81	N.W.	s.w.	10	7	R.	C.	.29
	·			[—- ⁻	I,	,1	i—I	,	l —	<u>'</u> '	'			2.13

*O., cloudy; C., clear; F., fair; G., fog; H., hasy; S., smoky; R., rain; T., threat ning; N., snow. † Indicates trace of rainfail as Mean for week.

RECORD OF MORTALITY

FOR THE WERE ENDING SATURDAY, NOVEMBER 10, 1894.

	in de	the	Ę	Per	centag	e of d	aths f	rom
Oities.	Estimated population.	Reported deaths	Deaths under five years.	Infectious diseases.	Consump- tion.	Diarrhosal diseases.	Typboid fever.	Diphtheria and eroup.
New York	1,956,000	601	201	12.75	14.28	2.72	.51	7.14
Chicago	1,600,000					~=	1.82	
Philadelphia .	1,139,457	392	129	15.86	14.30	2.84		10.14
Brooklyn	1,013,000	364	131	16.74	13.77	1.35	1.35	12.42
St. Louis	540,800		-				4.00	
Boston	501,107	198	67	24.50	7.00	2.0	2.00	14.00
Baltimore	500,000	91	35	17.44		1.09	7.63	7.63
Washington .	2-5,000		48		14.17	10.53	.81	5.67
Cincinnati	325,000	123 109	48	17.+2	8.10	1.84	4.60	1.84
Cleveland	325,000	96	25	36.80 16.64	7.36	6.24	3.12	6.24
Pittsburg	272,000		20	16.01	8 32	0.24	3.12	0.24
Milwaukee	265,000 87,754	_		_	_	_	_	
Nashville		=	= 1	_	_	_	-	
Charleston Portland	65,165 40,000				_	_	_	1 =
TTT	100,410	36	16	22.08	8.34	8.34	_	5.56
Fall River	92,233	30	17	13.33	3.33	6.66	6.66	0.50
Famall	90,613	35	12	19.30	8.58	5.72	-	2.86
Cambridge	79,607	34	12	26.42	14.70	14.70	_	8.82
Lynn	65,123	15	5	46.66	14.10	33.33	6.66	6.66
Springfield	50,284	19	3	10.52	26,30	_	5.26	-
Lawrence	49,900	_	_			_	_	_
New Bedford .	47,711	11	7	_	9.09	_	_	-
Holyoke	43,348	7	Ü	12.84	14.28	28.56		_
Brockton	33,939	6	3	16.66	_	_	_	_
Salem	33,155	4	1	25.0∪	25.00	25,00		_
Haverhill	32,925	1	0	_	_	_		_
Malden	30,209	8	1	12,50		-	12.50	_
Chelses	29,806	6	3	16.66	16.66	_	_	16.66
Fitchburg	29 3:3	4	2	_	_	-	_	_
Newton	28,837	4	0	50.00	-	_	50.00	_
Gloucester	27,293	-	-	-	-	_	_	-
Taunton	26,954	10	1	10.00	30.00	_	10.00	_
Waltham	22,058	4	1	25.00	-		_	25.00
Quincy	19,642	4	2	50.00	_	_	_	50.00
Pittsfield	18,802	5	2	40.00	_ _ _			
Everett	16,585	. 5	2	20.00	-	_	_	20.00
Northampton .	16,331	8	0	_	-	_	_	-
Newburyport .	14,073	2	1	-	_	_	_	-
Amesbury	10,920	2	1	_		_	_	i

Deaths reported 2,327: under five years of age 815; principal Deaths reported 2,327: under five years of age 815; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 411, consumption 282, acute lung diseases 265, diphtheria and croup 192, diarrheal diseases 85, typhoid fever 49, scarlet fever 47, whooping-cough 14, cerebro-spinal meningitis 12, measles 5, malarial fever 4, erysipelas 3.

From scarlet fever Cleveland 29, New York and Philadelphia 4 each, Boston 3, Brooklyn, Washington, Lowell, Cambridge, Springfield, Pittsfield and Woburn 1 each. From whooping-cough Brooklyn 5, New York, Philadelphia, Boston, Pittsburgh, Somerville. Brockton, Fitchburg, Pittsfield and Clinton 1 each.

cough Brooklyn 5, New York, Philadelphia, Boston, Pittsburgh, Somerville, Brockton, Fitchburg, Pittsfield and Clinton 1 each. From cerebro-spinal meningitis New York and Worcester 3 each, Boston, Washington, Cincinnati, Cleveland, Lowell, Holyoke and Fitchburg 1 each. From measles New York 2, Boston, Cleveland and Providence, 1 each. From malarial fever New York 4. From erysipelas Boston 2, Philadelphia 1.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending November 3d, the death-rate was 17.3. Deaths reported 3,4.5;

November 3d, the death-rate was 17.3. Deaths reported 34.5; acute diseases of the respiratory organs (London) 329, measles 96, diphtheria 90, diarrhea 81, fever 46, scarlet fever 37, whooping-cough 32, small-pox (Birmingham 2, London 1) 3.

The death-rate ranged from 10.2 in Croydon to 25.4 in Burnley; Birmingham 15.1, Bradford 24.0, Hull 18.1, Leeds 20.3, Leicester 13.0, Liverpool 22.6, London 16.4, Manchester 17.3, Newcastle-on-Tyne 19.4, Nottingham 13.1, Portsmouth 14.0, Salford 21.3, Sheffield 17 9, Sunderland 23.8.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 10, 1894, TO NOVEMBER 16, 1894.

Leave of absence for one month is granted Captain Benjamin L. Ten Eyck, assistant surgeon.

By direction of the Secretary of War, the leave of absence granted First-Lieut. Francis A. Winter, assistant surgeon, in S. O. 71, July 25, 1894, Department of Texas, is extended one month.

By direction of the Secretary of War, the leave of absence granted Captain Eugene L. Swift, assistant surgeon, in S. O. 147, October 11, 1894, Department of Dakota, is extended one

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NO-VEMBER 17, 1894.

- J. M. FLINT, medical inspector, detached from the U. S. S. "Baltimore," home and three months' leave.
- C. U. Gravall, surgeon, ordered to the U. S. S. "Charleston," per steamer December 4, 1894.
- J. A. HAWKE, surgeon, detached from the U. S. S. "Charleston" and to the U. S. S. "Baltimore."
- J. S. Hope, assistant surgeon, ordered to the U. S. Receivingship "Franklin."
- W. H. BARNUM, assistant surgeon, detached from U. 8. Receiving-ship "Franklin" and to the New York Navy Yard.
- M. F. GATES, passed assistant surgeon, ordered to the U. S. Receiving-ship "Richmond."
- G. R. Brush, medical inspector, ordered before Retiring Board at New York, November 17, 1894.
- L. G. Heneberger, surgeon, detached from Marine Rendez-vous and continue special duty in New York.
- J. M. STEELE, surgeon, detached from League Island Navy Yard and to Marine Rendezvous, New York.
- W. H. Rush, passed assistant surgeon, detached from Naval Academy and to the League Island Navy Yard.
- A. M. D. McCormick, passed assistant surgeon, ordered to the Naval Academy, Annapolis, Md.

APPOINTMENT.

Dr. James M. Jackson has been appointed physician to outpatients at the Massachusetts General Hospital.

HARVARD MEDICAL SCHOOL.

EVENING LECTURES.

The next lecture will be given on Thursday evening, November 29th, at 8 o'clock, by Prof. W. T. Councilman. Subject, "Bright's Disease." Physicians are cordially invited.

SOCIETY NOTICE.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.— A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday, November 26, 1894, at eight o'clock, P. M.
Dr. A. L. Mason: "Medical Treatment in Diphtheria."
Dr. E. M. Buckingham: "Diphtheria." Discussion opened by Drs. Geo. B. Shattuck, F. H. Williams, C. F. Withington, W. H. Prescott.

JOHN T. BOWEN, M.D., Secretary.

BOOKS AND PAMPHLETS RECEIVED.

Are There Degrees of Insanity. By R. M. Phelps, M.D., of Rochester, Minn. Reprint. 1894.

Spindle-Cell Sarcoma and Epithelioma; A Report of Cases. Arsenite of Copper as an Antispasmodic. By W. Blair Stewart, A.M., M.D. Reprints. 1894.

Original Articles.

PREVALENCE OF BOVINE TUBERCULOSIS.1
BY DR. AUSTIN PETERS, BOSTON.

Tuberculosis has been known for all time, and among all civilized people and in all habitable climates. A mong cattle-keeping people it is known among their bovines; and while it continues to exist among the human race, it will prevail among their cattle, its prevalence among the latter depending upon how they are kept, where they are kept, what they are kept for, and upon the susceptibility of certain breeds or the constitutions of certain individuals.

Among the human family, as well as among the ox tribe, has Pharach's dream been constantly repeated, from the days of Joseph to the present day. seven well-favored, fat-fleshed kine have been devoured over and over again by the seven ill-favored and leanfleshed kine, which I have not the least doubt were suffering with tuberculosis. It is not even necessary to have the seven ill-favored and lean-fleshed kine to devour the seven healthy ones; for if a single tuberculous cow be placed in a dark, badly-ventilated stable with the seven well-favored ones, kept under unhealthy surroundings and forced to an enormous yield of milk, this single ill-favored and lean-fleshed individual will in time succeed in devouring the seven well-favored Notwithstanding the fact that the milk from this herd yields the greatly-to-be-desired 13 per cent. of total solids, yet will there be "death in the pot," or rather in the milk-can - "consumption at eight cents a quart," or cholera infantum at the same price, or perhaps a pleasing mixture of the two commodities combined.

Admitting that tuberculosis is due to a specific germ, the bacillus of tuberculosis, and that it can be communicated from one animal to another of the same or a different species, by means of the expectorations after they become dry, or by the consumption of the flesh, milk, or dairy products of tuberculous cattle, yet in order to appreciate the danger to human beings from the use of the dairy products of tuberculous cows, it is important to have some idea of its prevalence.

It is an impossibility to get any statistics to show the extent to which this malady exists among our bovine population, but I think I can show that it is of sufficient frequency to be of very great importance from a sanitary and economic standpoint.

Fleming, in his "Manual of Veterinary Sanitary Science and Police," in speaking of the geographical distribution of this disease among animals, says: "Tubercular phthisis, or tuberculosis, probably prevails among domesticated animals over the entire globe, though its frequency will depend upon various external influences, as well as the constitutional tendencies of different species and breeds. In some countries it is enzootic and very destructive. Such is the case in densely populated districts and in unhealthy climates, or in regions where animals are improperly fed and housed. In Mexico, for instance, it is very common, and causes much loss; about 34 per cent. of the animals slaughtered for food being found affected. Europe, particularly in the cow-sheds of the large towns and cities, it is extensively prevalent; and in this country (meaning England) it has long been recog-

¹ Read before the Massachusetts Veterinary Association, May 23, 1894.

nized as a common disorder among animals, but more especially as affecting the bovine species."

Walley's "Four Bovine Scourges" considers contagious pleuro-pneumonia, rinderpest, foot and mouth disease and tuberculosis as the four great cattle plagues of the world.

In this country rinderpest is unknown; foot and mouth disease does not exist at present; contagious pleuro-pneumonia has been stamped out in every locality in the United States where it has ever existed. So that to-day we can safely say that the only one of the four great bovine scourges staring us in the face and challenging us to combat, if we are not afraid to grapple with it, is tuberculosis.

During the past four or five years many of the States, particularly in the East, have been aroused to take steps to eradicate tuberculosis from among their neat stock, chiefly by having the work attended to by cattle commissions; and while numbers of cattle are examined, yet, as a rule, the work has not been done in a way to give any idea of what relation the number of diseased cattle bears to the number of healthy ones, or what the ratio of herds where the malady exists, is to the herds where the creatures are all healthy.

During the winter of 1892 and 1893 the New York State Board of Health, having been empowered to regulate the matter of bovine tuberculosis in that State, undertook a farm-to-farm inspection of the cattle in two dairy districts, with a view of ascertaining about the percentage of tuberculous cows in a certain region. In lower Westchester County approximately 10,000 head were examined, and in the neighborhood of 80 were destroyed as tuberculous, or .8 per cent. In Orange County, in the neighborhood of Monroe, about 10,000 head of cattle were examined and 35 were killed as tuberculous, or .35 per cent.

In testing herds with tuberculin, I have found that by means of the old-fashioned physical examination about one case out of three present could be picked out; that is, after diagnosing the cases present in a herd by means of a physical examination, and then testing it with tuberculin, three animals will react to every one found by means of an ordinary diagnosis. Taking this for granted, it is safe to say that among the herds of the farmers in a district like Orange County, which somewhat resembles Worcester County, about one per cent. of the cows are tuberculous, these herds being made up largely of hardy grades of the Ayrshire, Holstein and Short-horn families. Westchester County, nearer New York City, where more cattle of the Channel Island breeds are found, and the system of dairy farming more nearly resembles the milkmen's management on the outskirts of our large towns and cities in Eastern Massachusetts, it is safe to say that between two and three per cent. of the cows are tuberculous, allowing that only one case can be detected by means of a physical examination to three that will show a well-marked reaction to tuberculin. These figures compare quite evenly with the abattoir statistics of many of the cities of France, Germany, Belgium and Holland.

In Eastern Massachusetts we have no exact figures to give us statistics; but it seems to me that bovine tuberculosis must be much more frequent here than even in Westchester County, N. Y., or else I have been unfortunate enough to be called, during the past winter, to see so many herds where tuberculosis exists, as to prejudice me into this belief. Since December

1st, last, I have had occasion to examine about 500 head of cattle in Eastern Massachusetts, of which 75 have been tuberculous; but then, of course, I am very likely to be called to examine creatures where the presence of tuberculosis is known or suspected.

As to the prevalence of tuberculosis among cattle of various ages and sexes, abattoir statistics show it to be very rare in calves killed for veal. It is seldom seen in steers and oxen killed for beef; in fact, it is almost unknown among our Western beeves. It is seen chiefly in cows when slaughtered for food, and is met most frequently among dairy cows from the outskirts of large cities and towns. Here it is found more among the older cows, the lesion being much more readily found in cows over six years old than among those younger. That is, overcrowding in unsanitary stables and the depleting influences of lactation are the two great predisposing causes. Among certain fancy herds of pure-breds of different breeds tuberculosis exists to an alarming extent; but this is because some of our breeders have nurtured this malady as carefully for years as though they were trying to breed tubercle bacilli instead of cattle.

In Massachusetts our system for dealing with bovine tuberculosis is faulty: in the first place this is a commission-ridden State; everything is managed by commissions of three or more men. It is a well-known fact that an army of three generals would meet with defeat; a ship with three captains would meet with disaster; a railroad with three superintendents would go into bankruptcy; and yet that which would bring defeat in war, disaster in commerce, and bankruptcy in business is expected to work successfully in the affairs of an over-taxed people. These are the views of Seth Low, President of Columbia College, and Gamaliel Bradford. The only possible excuse for such a system is that it furnishes salaries for a lot of played-out politicians and impecunious lawyers, instead of placing the management of affairs in the hands of single, responsible heads, directly accountable to the appointing power.

Another criticism of the present state of affairs is the system of town and city cattle inspectors. city or town may appoint a competent veterinarian to such a position (these instances are rare); a few more cities or towns may appoint an incompetent veterinarian, who is but a very slight improvement over any other ignoramus; but in most instances the appointees are men of no special qualifications for the positions they hold; their examinations of herds are farces, and the certificates they write are not worth the paper they

I am in favor of having a State veterinarian who shall be responsible either to the State Board of Health or to the State Board of Agriculture, depending upon whether this subject is considered most important from a public health or an agricultural point of view; then divide the State into districts, say ten or a dozen in number, and appoint the best veterinarian in that district (that is, the best cattle practitioner, as the best horseman is not always the best cowman) district veterinary inspector to act under directions from the State veterinarian. Furthermore, owners of animals suffering from contagious diseases should be reimbursed. The co-operation of farmers in eradicating bovine tuberculosis will never be secured until this is done. There should be also an arrangement for utilizing the meat of slightly diseased cattle for food, 1894.

and the proceeds of these sales should be used for helping to pay the expenses of this work. outrage to destroy a man's property without paying for it, and absurd to say that tuberculous cattle are not property.

The relation that the use of milk from consumptive cows bears to the malady in mankind will never be known until thorough steps are taken to prevent its use. If all the tuberculous cattle in the State were killed to-morrow, and infected stables burned, there would be a fresh supply in a few years from the contamination of consumptive persons, unless boards of health and physicians are ready to look upon it as an infectious disease, call it thus in annual reports and vital statistics, and take steps for preventing its spread from person to person and from mankind to cow. we start a crusade against the poor cow, without taking any other precautions to guard against it, we shall be simply continuing to prevent a waste at the spigot while there is a big leak at the bung.

Sterilizing food is a safeguard to the public health; on the other hand, there is the economic standpoint of great importance to the farmer of protecting healthy from diseased cows.

I suppose that what I have said will lead to the old time hue-and-cry that "the horse-doctors want a pull at the public crib, but they shan't have it" so long as there are any fossilized politicians, unsuccessful lawyers, or even decayed labor-leaders to be provided for; but let me remind you that a capable veterinarian can make more in private practice than the salaries usually paid by the State amounts to, and as I generally give my text at the end of my sermons instead of the beginning, I will simply suggest to you, "To render unto Cæsar the things that are Cæsar's, and unto God the things that are God's."

DIAGNOSIS AND PREVENTION OF BOVINE TUBERCULOSIS.1

BY DR. J. F. WINCHESTER, LAWRENCE, MASS.

IT is essential in discussing the diagnosis of tuberculosis, to bear in miud that the veterinary surgeon may be called upon to say whether an animal is affected or not, under two very different circumstances. He may, in one instance, be expected to make a differential diagnosis in a case where the animal is noticed to be ill, and regarding which his advice is desired by the owner; or in another animal, as a veterinary inspector, he is expected to recognize the disease, when to the ordinary observer and owner the animal has the general appearance of health. It certainly must be very apparent, that if there exists any uncertainty in the first of these conditions, by a physical examination, how much greater must that difficulty be in the second. In order to illustrate this difference, one ought to bear in mind the lesions found at the autopsy of animals that have died from tuberculosis, or have been killed because hopelessly afflicted with it, in the first instance; and those lesions of tuberculosis which are found in animals killed for food, and supposed to be healthy at the time of slaughter, in the second.

The lesions of this malady have a very different distribution when we take account, not merely of the animals about which veterinary advice is sought, but

of all cases in which tubercolosis in any degree is brought to light by a reasonably careful post-mortem examination. An absolutely certain diagnosis can seldom or never be made by ordinary clinical methods.

Tuberculosis may be acute or chronic, and the former may run its course in a few weeks, while the latter may last for years. At the beginning in the acute form, and for an indefinite length of time in the chronic, the disease process may be confined to one organ or to one region of the body, and the symptoms will vary according to the tissue involved.

In all the various forms and seats of the disease, the bacillus may be found in the affected parts. the lungs are involved in the chronic forms, and the amount of the tissue is not extensive, the animal often presents the general appearance of health, with perhaps the exception of a slight cough. The diagnosis of such cases by the ordinary physical method will, as a rule, give negative returns, and suspicion only can be attached to such a case if associated with tuberculous animals. When the lungs become very extensively involved, the symptoms are more distinct and reliable; then the general appearance of the animal will assist. The fact that the lung in tuberculosis consolidates in patches with intervening spaces of normal tissue, will aid one to differentiate from many other forms of lung trouble. In the bovine race, when a certain amount of the lung is diseased, and that not slight by any means, they will gain in flesh, if the digestive system is in a normal state, while at a point beyond that necessary for the required oxidization of the blood, they will fail; the same clinical fact is seen when the pleura is extensively diseased.

The diagnosis of this disease in the digestive tract is impossible in the early stages by the usual method, and it is only when emaciation, diarrhea, constipation, and periodic attacks of hoven occur, that one might be justified in condemning the animal, if there are no other associated symptoms.

Occasionally one will see a bovine with chronic hoven; and if associated with tuberculosis, the postmortem will often reveal an enlargement of the lymphatics at the cardiac portion of the esophagus, posterior to the diaphragm.

The different diagnosis of the diseases of the udder is very essential, for it is frequently tuberculous. When simple mastitis is present, you will find a diffused swelling of the quarter affected, which is hot and painful to the touch, the milk changes in its physical appearance and, as a rule, it responds quickly to treatment. When the udder is tuberculous, the swelling is hard and nodulated, and, as has been well said, it feels as though it was full of kernels or seeds, well defined; it is neither hot nor painful nor does the milk change in a marked degree, although in a short time it becomes poorer in quality while it may increase in quantity. The external or superficial glands, in many instances, will decide the question of this malady. They are larger than normal; nodulated, and those on one side of the body will not correspond in size to the opposite. Tubercles are sometimes found in or under the skin, and are easily felt in the form of well-defined nodules.

The placenta in tuberculous animals is often studded with small, opaque, well-defined new formations. The bones and articulations are not uncommonly attacked, those entering into the formation of the elbow, knee, hock, and stifle joints being most often affected. Lame- by the use of tuberculiu, and many of the animals

ness is very marked in some cases; the joints swollen and tense; the ends of the bones enlarged. The diseased bone may crumble and sharp spiculæ protrude through the skin. The cerebro-spinal system is not exempt from its ravages, and tubercular meningitis is not unfrequent. The symptoms will vary according to the location, from excitement to stupor, paralysis, partial or complete. Some animals will walk in a circle for days with the head down and to one side. Young animals not unfrequently die from acute tubercular meningitis. Paraplegia is seen when the lesions are located in the lumbar region of the spinal cord. It is generally acknowledged that the diagnosis of tuberculosis is no simple matter in any stage, especially where one cannot obtain a history of association with tuberculous animals; then how much more difficult must it be in equivocal cases. Instead of depending upon a physical examination or clinical observation to diagnose this malady, use can be made of the microscope, inoculation, or the injection of tuberculin.

The first two methods require special study and considerable time, which is not practical or desirable when a large number of animals are in question, while the third has been demonstrated to be an almost infallible test with proper care and observation. The tuberculin test is based on the fact, as shown by Koch, that it increases the activity of the disease process, creating a general disturbance of the system which is manifest by an elevation of the temperature. The minute quantity which will not affect a healthy animal, when injected into a slightly tuberculous one, will in from eight to twenty hours cause a decided rise in tempera-The explanation of this is, that the system contains tuberculin produced by the disease, to which the animal has become so accustomed that it cannot be detected by any clinical test. When the small amount of tuberculin used for the test is introduced into the circulation, it increases the activity of the disease process, and as a result the temperature of the body is elevated. From this fact it is evident that the quantity of tuberculin to be used ought to vary with each animal, but experiments and observation have demonstrated that for ordinary-sized cows, a certain amount (25 cubic centimetres) can be relied upon for positive results in occult cases. Cases may occur in which the temperature of a cow will rise after the injection of tuberculin and still the animal is not tuberculous. Any febrile disturbance may set in after the injection, such as the period of heat or bulling, close approach to parturition, active exertion, exposure, too hot sun, confinement in a close building or privation of water.

It is evident from these facts, that only the trained veterinarian should use tuberculin, and he must always be on his guard not to mistake any febrile disturbance that may arise, other than would occur by the use of tuberculin in the tuberculous. Laying aside these and other causes of error in unskilled hands, the elevation of the temperature should not condemn tuberculin, but stimulate a search for occult tubercles, and a failure will be rare.

There are cases where the animal is tuberculous and the injection of tuberculin will not cause any febrile reaction. In such animals the system is saturated with tuberculin, and the small amount injected will not make an impression. These cases are readily diagnosed by a physical examination. A reaction will take place, even in the slightest case of tuberculosis,

passed? It is admitted by the producers of vaccine virus that the bovines that are used for its production should be in a normal condition, and that for this reson they are examined by a veterinarian in some instances, and at other times by a so-called "competent"

would live for years and might recover. For this reason, when it is desirable to dispose of the diseased animals or to exclude from a herd any that are tuberculous, it is indispensable as a diagnostic agent. When tuberculin is properly prepared, it will not injure a healthy animal. That it will aggravate tuberculosis already in existence, is an established fact, and for this reason it has demonstrated its value as a test. Knowing this, it should never be used unless the owner or the government intend to make thorough work of eradicating the diseased animals.

Tuberculosis has been described as a universal panzootic, and from the deaths in the human subject of this disease it can well be termed pandemic. This being evident, prevention is certainly the most rational method of making any inroad into its prevalence.

Fleming, in his "Sanitary Science," 1875, under the heading of "Prevention," says: "The only preventive measures with which we are acquainted are those of a hygienic kind - proper food and water; sufficient exercise in the open air; clean, dry, and well-ventilated but not too cold stables; and keeping the cattle from undue exposure to severe weather. As there is reason to believe that the malady is hereditary, cattle having any tendency to it should not be bred from. As the experiments which have been conducted by most competent authorities have demonstrated that tuberculosis can be induced in animals by feeding them with tuberculous matter, care must be taken that this is not given to them as food. There being much reason to believe that the disease can be transmitted by cohabitation, whenever cattle show any tendency to it, they should be isolated from the healthy, and every precaution observed with regard to preventing contact. Animals slightly affected should be fattened and slaughtered; and their flesh, if free from traces of the disease, may be utilized. The milk of such animals should be proscribed, and in advanced cases, the flesh also."

It is readily seen from this quotation that the requirements for protection against the disease, either in man or animals, are the same. It can be concisely stated in the word "hygiene." I doubt if any one will take exception to the statement that sunlight, combined with cleanliness, proper drainage and ventilation, is necessary to maintain and create a constitution capable of resisting disease. Tuberculosis is an infectious disease, and with the means we have to diagnose this malady, there cannot be any excuse why the products of tuberculous animals should be used for the benefit of man.

In a brochure issued by the State Board of Health of Massachusetts (May, 1894), it is admitted that the milk from tuberculous animals is a menace to the health of mankind, and it should be proscribed. In regard to the meat from such animals, they recommend its thorough boiling, although they do not feel confident that it will cause the disease, since clinical evidence to that effect is not in existence. Since tuberculosis is a preventable disease, undoubtedly there are cases that will recover. This being a fact, why allow or sanction even the use of tuberculous meat, when it is known that the ptomaines or tuberculin which exists in the flesh of tuberculous animals are not destroyed by boiling, and if introduced into the system of a tuberculous individual, will excite the activity of the disease. Is it not desirable to ameliorate a case of tuberculosis after the possibility of prevention has

In an article in the Boston Medical and Surgical Journal, May 3, 1894, on the production of vaccine virus, no evidence is shown that tuberculin is used. Then of what value can be an opinion as regards the existence of tuberculosis in its occult form? One firm uses mature animals in order that the lymph may be richer in germs, while the other (of the two firms examined) uses young animals that are less liable to be diseased. In neither of these establishments does it appear that the product of each animal is kept by itself, nor that the animals killed are subjected to an examination to establish the fact of their normal condition.

In conclusion, let me congratulate the State Board of Health for its bulletin, as a step in the right direction for the prevention of this, the most universal and insidious of all diseases in the animal kingdom.

SANITARY CONDITION OF DAIRY FARMS.1

BY DR. JOHN M. PARKER, HAVERHILL, MASS.

In a paper read before the American Medical Association in 1891 on "The Treatment of Chronic Pulmonary Consumption," the essayist remarks: "Our surroundings make us what we are. If our treatment could begin with the birth of the patient, in 99 per cent. of cases, we should have no tuberculosis to treat. No matter about the family history." This remark applies equally well to dairy cows. Their surroundings make them what they are. And I venture to assert that, if the sanitary and hygienic conditions were what they should be, we would have little or no bovine tuberculosis in our dairy herds. It is the common, every-day life a person leads that governs his health; and it is the common, every-day life the dairy cow leads that governs her health and vitality. Their surroundings make them what they are.

Sanitary science has made vast strides in the last twenty years, yet our dairy farms are in practically the same condition they were in fifty or one hundred years ago. In fact, no effort is made on the average farm to conform to any sanitary laws or regulations whatsoever. The old barbarous practice of confining the cattle in stanchions is still in use; and the old barn and barn-yard with its strong odor and slimy filth is still in existence.

Sanitary science is advancing every year. Our cities are well-drained; our drinking-water is carefully guarded; houses and schools must have sufficient light and air; our young men and children must have exercise; but yet our dairy cattle are expected to retain their health and strength and to maintain their vitality, shut up for months in close barns, without ventilation or fresh air, and with little light — compelled to stand in their tracks unable to move; unable to turn round even to lick their sides.

It seems strange that the entire question of the sanitary improvement of our dairy farms should have escaped notice as it has. It is not a new subject. For Read before the Massachusetts Veterinary Association, May 25.

many years past, authorities have agreed that the principal predisposing causes of tuberculosis are poor sanitary and hygienic conditions, and yet notwithstanding the universal prominence given to sanitary conditions as predisposing causes, they are almost entirely ignored among the prophylactic measures suggested by many of these same authorities.

No.	No. of Cattle.	Cub. ft. each.	Venti- lation.	Light.	Water.	Cellar.	Disposal of Manure.
1	7	465	None	Poor	City	Yes	Cellar
2	10	286	None	Poor	Spring	No	Outside
3	1	440	None	None	City	No	barn Outside
4	6	224	None	Poor	Spring	No	barn Outside
5	4	143	None	Poor	Spring	No	barn Outside
6	7	800	Stair-	Fair	Spring	Yes	barn Cellar
7	7	416	Way None	Good	Well	Yes	Cellar
8	12	487	None	Good	Well	Yes	Cellar
9	19	1,165	Good	Fair	Well	Yes	Cellar
10	3	266	Poor	Poor	Well	Yes	Cellar
11	3	1,336	None	Good	Puddle	Yes	Cellar
12	12	233	None	Good	Spring	Yes	Cellar

In showing that sanitary conditions are not observed as they should be on dairy farms, I have attempted to tabulate the conditions as found on twelve farms in this vicinity. These are not picked out, but are taken at random from farms visited from day to day. The table shows roughly the amount of cubic space per cow; the ventilation, light, water-supply; whether there is a cellar, with its condition; and how the manure is disposed of. You will notice, as a rule, that the cattle are far too crowded. In the city of Boston each animal must have 1,000 cubic feet of space, and probably, with good ventilation, that may be sufficient, at any rate it is an immense improvement on many farms in other parts of the State; but even 1,000 cubic feet is altogether inadequate if there is no ventilation. What must be the condition of the barns then, when as in No. 5, there is only 1434 cubic feet for each animal, with no ventilation. In only three farms out of the twelve, you will notice, is there any attempt at ventilation, and even in these it is more in name than fact. And in not a single barn that I have been in is there any provision made for the admission of

Of the twelve barns visited, four had good light, two had only fair light, five had very poor light, and one had no light all.

As a rule, New England farms have good water; but on some farms the wells are situated too near the yard and receive the surface draiuage, and in some instances the cattle are even watered in creeks and puddles formed by the surface water.

Keeping the manure in the cellar is another common practice. In eight of these twelve barns, the manure is kept in this way. At the farm referred to as No. 8, there are twelve cows, each cow with 487 cubic feet of space. This barn is well lighted; the windows facing the south; but there is no ventilation whatever, except when the door is open. This farmer

barn, and the manure is dropped into the cellar below, where it is allowed to remain till removed in the spring. In making a visit to this barn during the winter, a man who was with me had to leave the barn because of the foulness of the air.

At another farm, Nos. 2 and 4, there are two barns. In one containing ten cattle, each animal has 286 cubic feet with no ventilation and only one small window for light. The other barn has six cattle, each animal having 224 cubic feet. This one also is without ventilation or sufficient light. In these barns the air was

At No. 5 there is no ventilation and only one small window for light. In this barn each animal had only 1484 cubic feet. Two out of four animals were evidently tuberculous.

At No. 10 three cows are kept in a tightly boarded pen, 10 x 10 x 8, giving about 266 cubic feet to each animal. At this barn there is a small ventilator and one small window, but in winter when everything is tightly closed, the atmosphere is fearful.

The other day I visited a barn, No. 11, and in conversation with the owner, I asked him where he watered his stock. "In the puddle outside," he answered. The puddle was a marshy place where the water lodged in wet weather. It was situated about twenty yards from the barn and formed part of the yard. The manure pile was on sloping ground at the side and drained into the puddle.

At No. 12 there are twelve cows, each having 233 cubic feet, with no ventilation whatever, the farmer taking special pains to have a heavy canvas curtain in front of the cows. This is a fearful hole in winter time, and it has the reputation of being the hottest This farmer is said to lose barn in the district. three or four cows every year.

No. 3 is a small shanty in the city with neither window nor ventilation. The water is carried to the cow, and she is in the barn winter and summer. Inside the barn is terribly filthy.

At another farm (the State Experimental Station of a neighboring State), the barn is so hot and close in winter that a friend of mine who was visiting there, had to leave and go into the open air because the hot, foul air in the barn made him sick and inclined to

These, gentlemen, are common examples of the average New England farm. Farmers have been taught to do the very things that are injurious to their stock. They have been taught to keep the manure in the cellar. What is the result? You have a damp, chilly atmosphere full of foul odors and organic impurities. They have been taught to keep the barn close and warm, and the only heat it gets is from the animal body. The hotter, they think, the better it is.

In the great majority of dairy farms there is not even a pretence of ventilation, while the cattle are packed in as close as they can conveniently be put. A cow has about four or five times the lung capacity of a man, yet on many of the farms each cow has only a tithe of the space required by a child under seven years of age, and that without any ventilation.

Fresh outside air contains only a trace of carbonic acid, about four parts in 10,000. The air of a room would be only fairly good with eight or nine parts in 10,000, yet some barns have as much as fifty or makes a special boast that his cattle are not out of the sixty parts of carbonic acid in 10,000; and I have no barn from fall till spring. They are watered in the doubt, if the percentage were taken during cold

weather in winter when the barns are tightly shut up, the air would be very much worse. When only a small quantity of carbonic acid is contained in the air, the carbonic acid in the lungs is very readily diffused through the atmosphere; but when that atmosphere has become impure, when it contains a large amount list of diseases, some of them the most destructive and of carbonic acid with organic impurities, then the carbonic acid in the lungs is not so readily diffused through the air - it has found its level, and is retained in the system, where it lowers the vitality, causing the dulness and lethargy experienced by any one after sleeping all night in a close room.

In calculating the amount of impurity in the atmosphere of a barn, the carbonic acid is taken as the standard of impurity only because so far no simple means has been discovered by which the other impurities can be determined, so that the amount of carbonic acid shows only relatively the amount of impurity in the air.

When a ray of light penetrates a dark place, innumerable particles are seen floating in the air. In a barn these particles of so-called dust are organic matters given off by the occupants, as well as fungi, bacteria, dried manure, and particles of hay and grasses. It is this dust that is so dangerous as a source of infection in tuberculosis. The manure, as pointed out by Billings, contains the bacilli; when dry it becomes pulverized and powdery, and along with the discharges from the nose, it mixes with the dust and chaff and the other impurities in the air which are breathed by the cattle - ventilation which would rid the atmosphere in the barn of these impurities, being altogether

Drainage, and dark and damp cellars under the barns have a close relationship to the ventilation and warmth of the barn. The wet and filth usually found in the cellar, keep the air of the barn damp and chilly; while the decomposing animal and vegetable matters give off a quantity of carbonic acid which contributes largely to swell the amount already in the barn.

The cellar is considered by many farmers to be a necessity. There the manure is kept; there odd tools and implements are stored; and if the barn upstairs gets too crowded, one or more animals will be turned into the cellar. It is always dark and damp; the sunlight never penetrates there; the manure is thrown down, the liquid portion runs along and soaks into the ground; in many cases it is a little lower than the vard, and more or less of the surface water flows into it. It is never drained; usually it is damp and wet all summer long; the ground only dries by evaporation. According to Professor Kedzie, "To evaporate one pound of water consumes enough heat to raise the temperature of five and one half pounds of water from freezing to boiling point"; or, to vary the illustration, "Suppose that a tile drain discharges constantly for one day a stream of water whose cross section is one square inch, and velocity two and one-half miles an hour, this one day's drainage would save the heat equivalent to nearly six tons of coal."

Further, we must remember that barns are usually warm; this warmth causes a current of air upwards, so that this damp, chilly air is drawn up into the barn above, where it does the most harm. In referring to this condition Professor Kedzie forcibly remarks:2 "The evaporation of so much water renders the air over such a soil damp and chilly. This result is a

² New Hampshire Board of Health Report.

physical necessity. This damp and chilly atmosphere has a more serious result than the simple feeling of discomfort. It has a most depressing influence on the human system, lowering its tone, enfeebling the vital powers, and acting as the predisposing cause of a long incurable known to the medical profession. The depressing influence of the dampness and chilliness of a water-soaked soil is not to be compared to the effect of an occasional wetting, as when we are caught in a shower; the chilly dampness of the undrained soil is persistent and unremitting, dragging us down with its cold fingers at all hours, at 'noon of day, and noon of night,' as if we toiled and rested, waked and slept in a perpetual drizzle of cold rain. It may seem a small force at first; but its persistent, untiring and relentless pull tells upon the strongest at last like the invisible fingers of gravity which finally drag down all to a common level. This depressing influence is not developed suddenly and distinctly; but silently and secretly the sapping and mining go on till the explosion comes in sickness, suffering, and the sleep that is eternal."

If it is necessary to have cellars, then it is most essential that they should be well drained, well lighted and well ventilated; and the manure, instead of being dumped into the cellar, should be carried some distance from the buildings. Care should also be taken that the well is not situated so as to receive the surface drainage. Too often the well is situated in or near the barn-yard, and I have known cases where through either ignorance or carelessness, the cows were watered from a puddle or hollow near the barn into which the surface water from the barn-vard drained.

Light is another essential that is almost entirely neglected. Good light is just as essential to the health of the "higher animals as it is to plant life." We ordinarily get too much in the habit of viewing light in barns, as being simply for the purpose of enabling us to see what we are doing. Light, however, has a direct bearing on the health of the body, and an even more direct influence on the causation of this special disease under consideration. Light is especially necessary where, through want of exercise, the circulation is sluggish and the system is depressed; light will stimulate the circulation. It increases the oxidation; more carbonic acid is given off, and the functions of the whole body are quickened and enlivened; but sunlight also retards the growth of germ life, and more than that the vitality of certain forms of bacteria, including anthrax and tubercle bacilli, is destroyed by the action of light. So that while light is necessary for the healthy development of the higher forms of life, it is detrimental to the lower forms of life. And yet in how many barns are we able to see distinctly? In how many barns can we even see to read a thermometer without going to the window?

Nor are the above the only conditions that tend to impair the health of the dairy cow. On the average farm no care is taken, not a single precaution is observed to prevent the health of the dairy cow from breaking down under the strain to which it is subjected. Everything is made subservient to the one sole and single object of getting a large milk-supply.

One would think that common-sense would teach that to keep cows for months without their stirring out of their tracks, is, to say the least of it, an unnatural condition of things. Exercise is just as necessary

for a cow as it is for the rest of the animal kingdom yet it is something the dairy cow does not get.

Every one knows that exercise increases the flow of blood to the muscles; and in consequence of the greater amount of waste products carried off, and the greater amount of oxygen required by the system, a quickening of the heart's action and a quickening of breathing result. On the other hand, when little or no exercise is taken, the circulation becomes sluggish, and the heart, like any other muscle, degenerates for want of use; the breathing becomes shallow, and the lungs are not expanded. When any extra strain is put upon them, they are not able to do their work; and we have rupture and permanent dilatation of aircells, along with weak lungs and a predisposition to pulmonary disease.

Exercise, on the other hand, causes an increased flow of blood to the lungs, with an increased vitality and strength. The increased flow of tidal air in and out of the lungs will tend to prevent the slow-growing tubercle bacilli finding lodgement, and in this way prevent their growth and development in the lungs.

In referring to exercise, I don't wish to be understood as advocating a large field or range for the cattle to run over. I don't wish to advocate anything impractical; but I do think that the present method of confining the dairy cattle with stanchions is capable of improvement. I do think they ought to be allowed their liberty; and further I do not see anything impractical in any such suggestions. Any condition that affects the comfort of the animals must affect their general well-being. Every one here must have seen how cows will rub and scratch themselves when first let out for water; often, even when thirsty, they will not touch the water till they have first licked themselves all over. It is impossible to stand behind a row of cattle for five minutes without seeing one or the other make a more or less ineffectual effort to scratch the body. No animal can be comfortable confined as they are in New England at the present time.

Every one knows that these conditions exist and are detrimental to the health of the animal. Then why are they not attended to? It is because through force of habit we have got accustomed to them, we simply take it for granted that these conditions cannot be improved.

THE AGRICULTURAL ASPECT OF TUBERCU-LOSIS.¹

BY DR. W. R. SESSIONS, Secretary Massachusetts State Board of Agriculture.

It is but a few years since tuberculosis in cattle was known to the public to be prevalent. The attention of scientists, particularly of veterinarians, has lately been directed to the disease as a source of danger to the life and health of the human family. Investigations have proved the disease to be generally prevalent among the cattle in all thickly inhabited countries, although most of the cattle affected show few outward indications of the disease. In fact, a large majority of such infected animals are apparently healthy, and the presence of the disease cannot be detected with certainty without the use of tuberculin.

The danger to human life and health has been discussed and magnified until the public are demanding

¹ Read before the Massachusetts Veterinary Association, May 23, 1894.

action by the State authorities for their protection. Authority has been given the Cattle Commissioners to kill without appraisal all cattle found to be infected with the disease.

The discovery that the injection of tuberculin is a very reliable method of detecting the disease has led many to believe that this should be applied by the authorities to all suspected herds, and some people are of the opinion that all the cattle of the State should be subjected to this test. From the experience thus far had in the use of tuberculin, we are led to believe that a large proportion of the cattle that are apparently healthy would be condemned by this test. The present law provides no recompense to the owner of such cattle. These conditions make the agricultural aspect of tuberculosis very serious indeed. The nest stock of the State is rapidly decreasing, the decrease having begun with the agitation of the danger from tuberculosis. In 1890, 200,658 cows and 62,549 neat cattle other than cows were assessed. In 1893, 186,806 cows and 47,528 neat cattle other than cows were assessed, a decrease of 13,852 in cows and of 15,021 in other neat cattle, making a total decrease of 28,873 in three years. The number of cows had been previously quite steadily increasing for thirty years from 149,090 in 1861 to 200,658 in 1890.

The dairy is easily the most important branch of farming in Massachusetts. The State Census of 1885 gives us the latest reliable figures. By that the value of dairy products was \$13,080,526; hay, \$9,676,893; other staple products, \$4,578,763; fruit, \$2,386,290; vegetables (potatoes are included in staple products), \$2,762,941; animal products, \$5,398,439. The hay crop is quite largely dependent upon the dairy interest, and the animal products are so largely dependent upon the dairy as to be almost a part of it. The veal product is certainly a dairy product, and most of the veal of the State is grown on the skim-milk of our dairies.

If the killing of tuberculous animals is to go on without compensation to the owners, this most important industry must rapidly decrease, carrying along with this decrease a still greater decrease in the value of much of the farming property of the State. The fine dairy barns that dot the farms of the State will become valueless, and the pastures will be allowed to grow up to brush. The State can ill afford a decrease in its agriculture and in its agricultural population. If the fight against tuberculosis is for the public good, the public should make part, at least, of the sacrifice deemed necessary. Especially is this proper in view of the fact that many cases of tuberculosis in human subjects do not terminate fatally and many apparently recover. I quote from "Tuberculosis in Relation to Animal Industry and Public Health," by Dr. James Law. "Dr. Biggs tells us . . . that in the Charity Hospital of the city [New York], 30 per cent. of all deaths show old lesions of tuberculosis now becoming stationary. He quotes a Vienna hospital pathologist to the effect that he finds similar old stationary lesions in 85 per cent. of all post-mortem examinations. leaves but 15 per cent. who have not suffered from tuberculosis." It is not too much to claim that a like pro portion of bovines slightly affected with tuberculosis would never be apparently injured by it. Such cases should be paid for in full, if sacrificed for the public good. But it would be difficult for the officials to discriminate in the matter of allowance for cattle killed; and so it would probably be better to fix upon a portion of the value of the animal in health as the amount that should be paid to the owner of an animal condemned to destruction because infected with tuberculosis. I believe the owners of neat cattle as a class are unwilling to bear all the burden. They believe that if the public takes arbitrary possession of their property and destroys it, that an equitable portion of its value should be returned to them. In view of all that we know about tuberculosis, it cannot be absolutely determined what an equitable proportion is, and the matter must be decided by granting an arbitrary part of the original value.

The value of the animal condemned is but a part of His business is broken into; the loss to the owner. his herd is discredited; his customers are afraid of his product; and if permanent future immunity is to be gained by him, he must be to a large expense in disinfecting his barns and stables. This disinfecting is out of his line, but is as necessary to the public health as the slaughter of infected animals. The State should see that it is properly done; and it could be done cheaper and more certainly by agents of the State than by the numerous private owners. should not the State provide for this very necessary part of the protection of public health? Dr. Law says in the paper quoted above, "Sanitary laws, which in any way ignore or disregard the rights of property have within themselves the seeds of defeat. . . . If the stock-owner is not fairly reimbursed for his animals slaughtered, and for other losses sustained for the protection of the public health and of the country's herds, unscrupulous men will find ample means of trading off the as yet incipient and occult cases of tuberculosis, thereby planting the infection in new herds. Compensation must stop short of making the sanitary bureau a profitable customer for tuberculous animals at sound prices, but it must be so liberal as to enlist the ready co-operation of the stock-owner in having every infected beast safely disposed of."

The State is bound to protect the life and health of the people, and is also bound to do justice to all parties. The State is also, for its own good, bound to foster agriculture, for no nation can long continue prosperous without a prosperous agricultural population. A large per cent. of the successful men of our nation have always been from those born and reared on farms. It must continue to be so. And the more prosperous the rural population is, the larger proportion of able and faithful young men will it furnish for the service of the City, State and Nation.

A DISORDERED PERIPHERAL SPACE-ORGAN.

BY EDMUND D. SPEAR, M.D., BOSTON.

On Wednesday, November 23, 1892, Mrs. J. F. T. came for treatment of her head, because she had not improved under the care of a general practitioner, who was treating her for disease of the stomach and liver. Two months before, she had applied at the ear department of the City Hospital because she had previously obtained relief there for certain head symptoms. At that time she was told that the ear was not at fault, and was referred to her family physician. She had symptoms as follows: a "dazed" feeling, a nervous sinking and desire to get a long breath. She was

dizzy at times, but without tendency to fall in any particular direction; had a 'swishing' sound in the right ear; was not nauseated.

At the date, November 23d, she had all these sensations increased in intensity and accompanied with weakness of the back, palpitation of the heart and nausea. The previous evening's meal and the day's breakfast, though very moderate in quantity, were both lost by vomiting.

It is a very difficult matter, even for intelligent patients, to describe the symptoms which indicate the presence of a disordered space-centre. Witness the difficulty which obtains among writers, who try to give an idea of their feelings when returning from their first ocean voyage. I attempt an explanation of the term "dazed feeling."

It is an accepted fact that the knowledge of self-existence is derived from three sources. The consciounces of being comes to us slowly and gradually through long years of experiment with certain senses which can be named: the visual-sense, tactile-sense, and the space-sense. The organs giving us the sensations from which we learn the place we occupy in the physical world are nerves of touch, whose extremities are provided with special organs, the eyes, and the semicircular canals of the ear.

Ferrier has carefully collected the opinions of many experimenters as Cyon, Spamer, Högyes, Crum-Brown, to which he has added his own suggestions, and it is evident from these, as well as from other data, that we are constantly making use of these different senses, though more or less unconsciously, to maintain our equilibrium and adjust the movements of our muscles in performing the manifold acts necessary to the functions of the organism.

I have before referred in other writings, to certain phenomena illustrating the uses of the semicircular canals of the ear (or the peripheral space-organ) and the results of the observations in this case confirm my opinions then expressed.

If the space-organ is disturbed and performs its functions improperly, conveying impressions to the brain centres when it ought not to do so, we say we are dizzy. When the brain has been thus wrongly impressed for a considerable period of time the eyemuscles become affected, the visual impressions are not correctly transmitted to the brain, and there remains only the tactile sense from which the conscious ego retains its proper connection with the material world. This sense is not usually an acute or a cultivated one, and is insufficient to continue to serve in the place of the natural peripheral space-organ, so that the individual thus deprived of all means of properly locating himself in space loses confidence in himself, as having existence, and describes his condition as that of being dazed or dazzled.

When I first saw this patient's ear several years ago, she was frequently very dizzy. I then found an open tympanum with the membrane entirely destroyed, a mild form of inflammation of the mucous membrane in the "attic" or upper portion of the tympanum among those reduplications of membranes so carefully described by Bryant, and fluid lying between the two walls of the cavity and pressing through the incus and stapes against the oval window. At this time she obtained entire relief from the dizziness and improved somewhat in hearing.

Three months later she returned to my clinic after

having been treated uninterruptedly by my colleague, Dr. George A. Leland, whose treatment had produced almost complete reproduction of a (cicatricial) membrana tympani, but with the same tendency to fluid collections within. I could not believe it possible that this was the same ear; but when I heard the patient's story, I told her that for once I was sorry to see a reproduced membrane, for some day she would need it removed. That November proved my prophecy correct, for I found a minute opening in the cicatrix, which was dense and firm and bulging outward, from pressure of the retained mucus, which now completely filled the tympanum.

The countenance of the patient plainly gave evidence of her almost distracted condition. Her knit brows, worn features, appealing look showed her suffering. It was hard for me not to credit her story, that she had some chronic gastric or hepatic disease.

However, I firmly believed in the theory that the semicircular canals form a peculiar end apparatus for the preservation of the function of equilibrium, and through the connections of the vestibular branch of the auditory nerve with other nerves and centres can induce all the phenomena above referred to, and I told her that her troubles all proceeded from the ear. I made a horizontal incision across the bulging membrane and drew out, with forceps, thick mucus from the tympanum. The patient was asked to clear the ear twice daily with a warm alkaline solution and to return in two days.

It will be remembered that the next day, November 24th, was our annual feast-day. My patient returned on the Friday following, and stated that she was entirely relieved of all the head symptoms and had eaten heartily. The tympanum was clear and dry, and the incision had changed to a round perforation. Although she took cold several hours later and had a relapse, she had no return of the vertigo, nausea or emesis, and rapidly gained in health and strength, so that a month later she looked like a different woman.

In August of the following year, after this patient had continued to have mild attacks similar to those mentioned, and was partially relieved by incision, I entirely removed the reproduced membrane of the tympanum and cauterized its edges with chromic acid. Since the operation there has remained a dry, open tympanum; and if there have been two or three very mild attacks of dizziness, they have always been traceable to congestion of the tympanum following "cold" in the head, and always immediately relieved by nasal treatment.

Reports of Societies.

MASSACHUSETTS VETERINARY ASSOCIATION.

REGULAR Meeting, May 23, 1894, Dr. ALEXANDER BURR, the President, in the chair.

After the reading of the papers by veterinarians on

BOVINE TUBERCULOSIS,1

the President called on Dr. H. C. Ernst.

Dr. H. C. Ernst: I came here to-night as a listener and learner, and because I felt sure from the list of papers that I should learn something that would be of value to me, and I have certainly done so by

1 See pages 525-531 of the Journal.

listening to what has gone before. It is a repetition of an experience I have had in other years, where circulars have been sent out asking for information in regard to cases which appeared to show a transmission of tuberculosis through milk. My replies from the veterinarians who were kind enough to send me any reply at all, were more valuable than those I received from medical men, and so it has been to-night in the papers that have been read. There have been a number of points that have been brought up that seem to me to be of very great value, and that I have been glad to listen to. Among the things that have attracted my attention as I have listened, in the first place, was the point that Dr. Winchester made in regard to the condition of the udder showing tuberculosis, that one of the physical signs was the nodulated, seed-like feel of the udder, differentiating it from chronic or acute mastitis. The specimens I have seen in years past have usually borne out that assertion; but I have certainly seen some where it was, by any physical or technical examination, entirely impossible to differentiate the condition from mastitis, and it was only by the microscope that that differentiation could be really clear. I have now at the laboratory a number of specimens which showed at first sight the ordinary appearance of mastitis, and it is only when the high-power lens is put on that the presence of tubercular growth can be made out. That point I speak of because it would appear to me to be an illustration of the fact that tuberculosis in its very earliest stages, when the development first begins, has not yet gone so far

as to present this nodulated appearance to the fingers. I have been much interested to hear the assertions in regard to tuberculin. As far as my personal experience has gone with the various gentlemen who have used it, in conversation with them, the opinions seemed to be very varied. Here, to-night, it appears to be a pretty unanimous feeling that tuberculin does furnish a very accurate means for diagnosing tuberculosis in cattle; the other side of the question has been the demand that has been made upon me during the winter for tuberculin for just this purpose of diagnosis. I have furnished some of it, but the results that have come to me seem to show that there is reason for the varying opinion as to its value as a diagnostic

There is one point, I think, which may be of interest to the gentlemen here, because I have been asked concerning it several times, and that some of them do not know, and that is, whether the use of tuberculin has any tendency to produce tuberculosis. The question arises from the feeling which some men have that tuberculin is not thoroughly free from the active, vital, infectious principle; but, of course, that is not so. Tuberculin, if it is properly prepared, does not contain any principle which by any possibility can produce tuberculosis in a healthy animal, no matter what quantity is employed.

Dr. Parker's table, it seems to me, is a very striking one, and a serious arraignment of somebody. I do not know that the care of the cattle from which a milk-supply is obtained is under any one head, but if it is not, such a condition of things as this certainly appears to me to need attention. Secretary Sessions has said that, since the agitation in regard to tuberculosis, the number of cattle has decreased in this State, and that that decrease may perhaps be ascribed to the fear of the farmer of the loss of his stock because he

is not remunerated for it. One or two instances have come to my knowledge where it was not because they were afraid that their cattle would be destroyed that they disposed of them, but it was because they were afraid of being obliged to keep them under healthy conditions. Milk-men who keep cattle to furnish the milk-supply in the neighborhood of a large city think more money can be made, of course, if they keep their cattle in cellars under these dreadful hygienic conditions; and the moment any special investigation comes, and they begin to feel they will be obliged to put out more money upon their cattle, then they will go out of the business rather than run that risk. seems to me it is fair to take this feeling into consideration, as well as the point Secretary Sessions has made.

In regard to the hygienic surroundings of cattle and the specific action of sunlight upon bacilli, there is no question, of course, that these are very active factors in the destruction of the vitality of the organism. As to the exact time, I think it is hardly possible to state what that would be; but it is a well established law that sunlight is the very best germicide that we have yet discovered.

Another point is the assertion of Dr. Biggs, and the statistics showing a very large proportion of cases of healed tuberculosis that are found upon autopsy. I think these statistics are exaggerated, because I have not yet been able to find what evidence there is to prove that the cicatrices, etc., occurring in the lungs and other parts of the body, are healed tubercular lesions. They are healed perhaps, but why they should be called tuberculosis is something that has been impossible for me to understand. I do not think it is correct to claim, because a person is found to have a cicatrix in the lungs or elsewhere, that that person has had tuberculosis; and I trust that no such suggestion as that will be adopted.

Dr. W. T. COUNCILMAN: With regard to the importance of tuberculosis in cattle as a source of infection in man, we are too apt to belittle its importance. Tuberculosis is a disease which we have with us all the time, and one which probably carries off a greater number of the human race than any other single disease. We have been so long accustomed to its presence, that the disease, to a certain extent, has lost the horror with which we would invest any new disease. The most stringent measures are taken with regard to leprosy by all nations. Those affected are carefully isolated, and every care is taken to prevent new infection; yet the disease is one in which the danger of infection is so slight that many authorities deny its contagiousness altogether. Certainly we know enough about tuberculosis to be certain that infection may take place by means of food through the alimentary canal. Even though this be one of the less frequent ways in which infection takes place, we should take every measure to remove even such a chance for infection; and the cost and the difficulties of carrying out the prevention of infection in this way should hardly be taken into consideration. Probably one of the most frequent ways in which infection is spread by means of food, is from the milk of tuberculous cattle. Investigations which have been carried out in the laboratory of the Harvard University by Dr. Ernst, and in the laboratories in Germany, have shown that the presence of tubercle bacilli in the milk of

that such milk may convey the disease is given by the result of animal experiment, and by the prevalence of such tuberculous lesions in the bodies of children, which can only be accounted for by infection through the alimentary canal. The number of deaths from tuberculosis give us by no means all the cases of infection, for the disease is very frequently recovered from.

With regard to the use of tuberculin as a test, I I think it have not had a great deal of experience. likely that in some cases of completely obsolete tuberculosis, where the lesions are of small extent and consist chiefly of caseation with following calcification in a few of the lymph-glands, that the tuberculin may not give a decided reaction. I had some time ago the opportunity of examining carefully the lungs of three animals in which tuberculin was used without reaction. In two of these, although symptoms pointing to an infection of the lungs were observed during life, no tuberculous lesions were found. The lungs were the seat of an extensive broncho-pneumonia of the type so often found in cattle. In the other case the lesions were confined to a few of the bronchial lymphatic glands. These were calcified, and microscopic examination showed undoubted tuberculous lesions, but which had ceased to be progressive. On the outside of the calcareous material in the glands, tuberculous tissue was found.

It would be extremely interesting to find how the infection of animals takes place, and with a view of determining this point careful investigations should be made. It is very probable that infection takes place from animal to animal by means of the bronchial and nasal secretions. Although animals do not expectorate, still the contents of the brouchi must be scattered in the mangers and other places when the animals cough.

In this connection I would like to speak of a herd of cattle which belong to my brother, who is engaged in the dairy business in Maryland. The herd consists of about one hundred animals, many of which are pure Jerseys, and the others vary from one-half to three-quarters pure Jersey blood crossed with various other cattle. The herd has been kept up, though not quite so large as at the present time, for the last fifty years. During that time I have had the opportunity of examining a number of the cattle which have died of various other diseases, but have never found any evidence of tuberculosis among them. The cattle have all been raised on the place, about ten to twelve calves being turned out yearly. My brother has always been careful to employ only perfectly strong, healthy individuals in the care of the cattle, and has not allowed any strange cattle to come on the place. I think it might be very interesting in the case of a herd like this to go through the entire herd with tuberculin. There can be no doubt, that infection in the cattle frequently takes place from stablemen and others concerned with their care, who themselves have the disease.

hardly be taken into consideration. Probably one of the most frequent ways in which infection is spread by means of food, is from the milk of tuberculous cattle. Investigations which have been carried out in the laboratory of the Harvard University by Dr. Ernst, and in the laboratories in Germany, have shown that the presence of tubercle bacilli in the milk of tuberculous cattle is by no means rare. The proof

lief was first published as long ago as 1869 or 1870, I

Such tables as we see on the chart upon the wall, it seems to me, are unusually valuable, and I wish that these twelve observations could be increased to several thousand in this State. This ought to be done. It would be very convincing upon this subject to have a large number of tables prepared showing what are the actual conditions in which animals are kept for the production of milk and for slaughter. There is one additional column I should like to see added to that, and that is, the disposal of the dust from the stable and barn. That is one of the very important points. It has been shown by observation that dust and the disposal of dust has a great deal to do with the spread of consumption. Those industries which produce very large quantities of dust are those in which consumptives are most frequently found; and I wish that that one point might be shown, that is, as to the amount of dust and the dusty condition of the stable: how it is disposed of, whether the animals are turned out into the open air when the stables are swept, and whether the barn floors are sprinkled in order to keep the dust from arising, because it is certainly one of the most Dr. Winchester has very important conditions. kindly referred to the circular of the State Board of Health upon this subject which has been issued within the last few days, and some copies are upon the table for any gentlemen who would like to see them after the meeting. The subject has been taken up by many boards of health in this country (by the New York Pennsylvania and Michigan boards), and we have referred in that circular to the use of tuberculous meat and milk, or milk from tuberculous animals.

Much has been said here upon other points; therefore I will confine further remarks to the point mentioned by Dr. Winchester, the relation of tuberculosis to vaccination. In inquiries in regard to vaccination before the Public Health Committee this winter, this point has been brought up occasionally, not very strongly, but to some extent. Up to perhaps twentyfive or thirty years ago it was the practice throughout this country and almost all countries to vaccinate from "arm to arm," that is, by lymph taken from the arm of an infant on the seventh day and communicated to other persons by inoculation. That practice has almost entirely been done away with. We may safely say that nine-tenths of all vaccination in the United States at this time, and in many other countries, is now performed by lymph taken from the heifer. One reason for this change was the fear that vaccination from infants might convey syphilis, and there is no question that in rare cases such transmission may have happened. It was demonstrated by Dr. Corey in London, who allowed himself to be vaccinated by such lymph. had an attack of syphilis himself, and went through its stages and was treated for it; and that fact, together with a few accidental cases, gave great impulse to animal vaccination.

Now the question comes up whether the transmission of tuberculosis may be possible by means of vaccine. My own opinion is that it is extremely improbable, for several reasons. I give you the reasons as they are stated by some of the best foreign authorities. They are principally these:

(1) In the first place, in almost all foreign countries German law provides that calves are to be used there and bought skim-milk from the creamery to feed to

from three weeks old to two or three months. the custom in two or three or four German institutions to use young animals. Now tuberculosis is almost unknown among calves. The slaughter-house inspection at Munich and other places has shown the fact that not more than one in 50,000 is shown to be tuberculous, hence the use of such animals would be comparatively safe.

(2) Another reason is the following: It is not probable that the tubercular bacilli would exist in the integumentary tissues, that is to say, in the vaccine This point is not so easily demonstrated as the other.

(3) Again, vaccine inoculation is always performed by superficial scarification, and the puncture or scarification being extremely superficial, the infectious principle of vaccine lymph is very easily transmitted in that way, but tubercular infection is not likely to be transmitted except by a deep inoculation.

Those are the three principal reasons given why tuberculosis is not likely to be transmitted by the process of vaccination. It is quite an encouraging fact (and I think it is due partly to the rapid diffusion of popular information on the subject of tuberculosis) that the disease is diminishing steadily, uniformly. The number of deaths from tuberculosis in this State is definitely known; and it has certainly diminished, as far as deaths are concerned, from 25 to 35 per cent. within the last forty or forty-five years.

The President: I am sorry to say that one other member who had kindly consented to be here this evening, Dr. Durgin, Chairman of the Boston Board of Health, is unable to be with us on account of illness. Before opening the discussion I am going to call upon a few gentlemen to make some remarks, those who have been doing special work upon the subject themselves. I will now call upon Prof. Leonard Pearson, of the University of Pennsylvania.

PROF. PEARSON: I am very sorry you have seen fit to call upon me, because I have been enjoying myself and have been learning a great deal. I assure you I am repaid already for the journey I have taken to attend this meeting. The special subject of your discussion, as I understand it, is to formulate, if possible, some measures by means of which tuberculosis of cattle can be eradicated. This is such a deep and complicated question that it requires a great deal of study; and it seems to me that immature ideas upon questions of this sort should not be ventilated, but as to some other points that have been brought up I have had some little experience.

One case occurs to me which will throw a little light upon the means by which tuberculosis spreads, especially among cattle. I became familiar last fall with the condition of a herd of about 160 cattle some forty miles from Philadelphia. It was found that the percentage of tuberculosis among these cattle was something enormous. I think about 65 to 70 per cent. gave a reaction after the injection of tuberculin; and when they were destroyed, every one was tuberculous, and several of them had tuberculosis of the udder. The farmer who owned these cattle sent milk to a creamery. The cream was separated and made into butter, and the skim-milk returned to the farmer.

Another farmer, who had a herd of thoroughbred Guernseys, was shipping milk to Philadelphia and rethe animals used for vaccine culture are calves. The ceiving a high price for it, so he sold all of his milk the calves. He decided to have the herd tested, and the test showed that out of some eighty cows there were but two that had tuberculosis; but among the young stock there were several heifers that had tuber-All of the animals which gave reactions culosis. were destroyed. The cows had tuberculosis of the lungs, while the heifers had tuberculosis of the intestines. That seemed to show rather positively that the disease must have been conveyed by the milk, and that heredity or contagion had but little influence.

As to the reliability of tuberculin I might say a word, since I have had rather an extensive experience with that agent, and have tested now about 900 cows. Of these 900 cows, in the neighborhood of 200 have been destroyed after having given reactions, and the lesions of tuberculosis were discovered in all cases. In some animals the lesions were not very evident, and it required careful examination to diagnose the condition; but in every case examined they were found. In some of these cases the disease was so extensive that it could be diagnosed without tuberculin, but in others the disease was not so widespread, and could not be diagnosed without this agent. I know one instance in which the reaction came on twenty-eight hours after the injection of tuberculin, showing that the test by tuberculiu is exceedingly laborious, and requires in some cases twenty-eight, and occasionally thirty-six hours.

I think that is all I have to say. These points are things that have occurred in my own experience, and therefore things that I am perfectly familiar with, but as to the legislation which should be adopted, that is another point, and one that I think requires far more consideration than I have yet given it.

Hon. Levi Stockbridge of the Masssachusetts Cattle Commission: As to some of the points that have been taken up this evening I feel very much at home. Here is this table of Dr. Parker. I feel as if I was myself in some one of the many barns in Worcester and Middlesex, and I might almost say in every county of the State. I have witnessed exactly what he has described and pictured before us. There is one point, however, which I have always preached upon when I have been in those barns which have such close quarters, where cows are put in in October and do not go out-doors again until the following May, with close cellars underneath. In those cases there is another thing taking place which is injuring the animals, and that is high feeding to see how much milk they can be forced to produce beyond the capacity of the animal to bear it. But there is another side to that matter which has been discussed here to-night, and I wish the veterinarians would explain it. I do not understand it. Some of the best barns - so far as light, ventilation and all possible hygienic conditions that can be provided; with no cellars under the stable, outside of the barn proper — have had some of the worst cases of tuberculosis in this State. Can you account for it? I can call names, but it is not necessary. In more than one, in more than two, in more than three counties in this State where I have been at work, I can speak of barns that are model barns in all these respects; and report then. I thought I would like to know about yet there are more cases of tuberculosis in those barns | it before our own law goes through. than in poor barns. I condemn in unmeasured terms - in the strongest language I am able to use - those barns with cattle in the cellar, surrounded with water and by the great piles of manure that come down from

class barns, where all the hygienic conditions are supposed to be attended to - good light, cows outside of the barn (I mean in lean-tos, as they are called, where the hay is brought into them from the house barn) how in these barns they can have so many cases of tuberculosis. Week after week and month after month I am called to such cases, and order the cattle to be killed, and they are coming right along. Explain it, gentlemen, if you can.

Now in relation to another matter. Gentlemen have spoken here to-night on the use of tuberculin. Dr. Winchester did not say he thought the Cattle Commissioners ought to use tuberculin for the purpose of diagnosing this disease. I know he thinks so. He might just as well say it. But with all the work on our hands, and making short visits to these barns, that being the best we can do, when we get there you can see we cannot go into the work with tuberculin as a means of diagnosing, for it would take twelve, eighteen, or thirty-six hours in a given case, and that we cannot do. Last week I visited nine towns in this State, nine different towns scattered all over the State; and how could we use tuberculin? But we are not so green about tuberculin as we might be; and really I can say that a great deal of good in the way of diminishing this disease may be done by the use of tuberculin, and therefore I think the Commission would recommend to owners to use tuberculin. We think that a very great advance may be made by its use; but if you believe you are going to stamp out tuberculosis by the use of tuberculin, as we stamp out contagious pleuro-pneumonia, I say, No, we shall never do that We can diminish it, but can never stamp it out. But when our medical profession treat it as a contagious disease, we shall make more advance with the bovine.

Now, I ought not to take your time by talking about this matter, but the Cattle Commission must work by law. We have got to work according to law, and do only what the law authorizes us to do. In this one matter of paying for these cattle that are slaughtered, that are tuberculous, the Cuttle Commissioners state, as a matter of principle, in their annual report that they do not think the cattle should be paid for. The owner lost his animal when it got the disease, and the animal is not worth a dollar. If a man should come to you with a tuberculous cow, however slightly infected, and offer to give it to you and put it in your barn, would you allow it to come in?

I hoped Dr. Peters would say something about payment in the State of New York, and I would like to ask him the question: Has the Supreme Court of the State of New York ruled upon this question that it is unconstitutional to pay a man for an animal that is not worth anything?

Dr. Peters: Ask Dr. Faust.

Dr. James Faust: The State of New York paid thirty dollars a head last year.

PROF. STOCKBRIDGE: Has the Supreme Court ruled on that question?

DR. FAUST: No.

PROF. STOCKBRIDGE: That is simply a newspaper

DR. FAUST: Mr. President, I thank you very much for the kind invitation to come to this meeting, and I would like to start in right here by saying that I can see very readily why you cannot stamp out tuberculoabove. It seems to be an enigma, how in these first sis — because you will not give a poor farmer a dollar. That is why you fail. I endorse what the gentleman over there (Mr. Sessions) said, every word; and unless you do pay, you will never succeed.

and unless you do pay, you will never succeed.

I was amused when I heard Dr. Peters's paper. I am glad he went to Sunday School but he must have had a very poor teacher. The doctor says that the seven lean cows were tuberculous. Now, if you want to learn a lesson in Scripture, turn to Leviticus xxii, 22-28, and you will find a description of tuberculosis. The German text says, "Das Duerre, das Schwinden," and not as the English translation has it. Dr. Pearson knows that language very well.

Another point. This gentleman (Professor Stockbridge) asked a question. He spoke in regard to the elegant farms and stables, and wondered why tuberculosis should be found in them. That is a point worthy of consideration, and certainly ought to and can be answered. Since I have been employed for the State of New York, I have examined a great many cattle. I started with Hon. Levi P. Morton's stable; and I made this remark, that if he should turn the White House in Washington into a cow-stable, we could not have better sanitary conditions than his stable has. That is a fact. Out of 62 young and old, I killed 23 in the presence of two physicians and three competent veterinarians, and they were tuberculous beyond a doubt. Aside from that there was one heifer that three competent veterinarians examined physically, and all three were of the opinion that it had tuberculosis. It was tested with tuberculin, and there was no reaction. On the left side, in the middle of the lung, there was a dull spot. It was retested with a larger dose, but there was no reaction. And on the post-mortem there was no lesion found.

I went to Mr. E. Clarkson's place at Tiveli, and quarantined his cattle, because it appeared as if the whole herd were tuberculous. I used tuberculin very carefully, and not a single case of tuberculosis was found in that stable; yet I never saw worse sanitary conditions in my life than right here. Besides the cattle were starved, and the owner was a man worth millions of dollars. What was the reason of it? There had not been a bull or a heifer or a cow brought to that man's place in ten years, and previous to that time there had been no tuberculosis there. You cannot get tuberculosis without first having the germ.

I endorse every word that has been said here about hygienic conditions. I think, as veterinarians, we should have as much regard to sanitary conditions as the medical profession; and I think, if we understand our duty, we will do a great deal for the human race. I have tried to carry out these ideas. It is my aim. I am getting to be old and gray-headed, but not worn out; and I hope I shall live to see the day that this old gentleman (Professor Stockbridge) is disappointed, when we shall stamp out tuberculosis, and I am going to do my share towards it. One of the last cases I had was on Long Island - I won't mention the name, because it was private ground. On last Saturday I finished the killing of fifty-nine head, one cat, one dog, swine and chickens, and they were all tuberculous, and I am sorry to say the superintendent said to me, " Doctor, the worst of it is, two years ago I buried a pretty little boy, and the doctors from Brooklyn told me his sickness was caused by this milk."

I had another case at Mr. Douglas Merritt's, Rhinebeck, where fifteen years ago I was called (through the family physician) to examine a heifer. I pro-

nounced her tuberculous after a physical examination. She died a month afterwards, so it did not need a great deal of skill. That man has since lost a flock of sheep and almost his entire herd of cows. Nineteen out of twenty-one head were killed, and without a doubt all contracted it from this heifer. Dr. Traver, of the American Veterinary College, was kind enough to furnish me with the post-mortem results. Mr. Astor's superintendent, a nephew of Mr. Astor, himself told me that Mr. Merritt's coachman, who was a great lover of milk, died of tuberculosis in a hospital in New York City; and he thought that, as the coachman was a great lover of milk, he had contracted it from drinking the milk from the deceased cows.

It is slow, but sure. It makes no mistake. When it gets hold of a victim, he is doomed.

In regard to the test by tuberculin, I think its value is well established. I do not think it is worth while to go into details about that. It has been satisfactory where it has been judiciously, carefully and honestly used. But if a man is inclined to be lazy, he should not try to use tuberculin, because it is very hard work. In one case at Hon. Levi P. Morton's, I got the commencement of a rise of temperature in the sixteenth hour. We went to work and kept it up and the temperature went up and down like a fever curve: but we carried it out for thirty-six hours after that, and it proved to be one of the worst cases of tuberculosis. In regard to the age of diseased animals, my experience is different from Dr. Peters's. I find that younger animals suffer more than old ones. And, of course, as has been mentioned by Dr. Peters in his paper, around cities it is worse than farther off.

From personal knowledge I will cite a few cases to show how herds can be infected by cattle brought from other herds. Douglas Merritt's beifer came from Mr. John D. Wing's. I killed 27 head for Mr. Wing in the presence of Professor Law. Mr. O. T. bought 25 head from Mr. Wing. Nineteen out of the 25 were killed, besides infecting his own herd. Mr. P. L. V. bought 25 cows from Mr. Beck — before that I had killed 70 head on Mr. Beck's place. And all this in eight years. Since Mr. V's purchase, I have killed for him 32 head; and of these 29 were of his own herd, the others purchased from Mr. Beck had been sold. This tends to show that the infection is carried from one herd to another.

The PRESIDENT: We have with us one other member of our profession who has done a great deal of work upon this subject; one who has probably devoted more attention to tuberculosis than any member in this State, or any member of the profession working in this State. I refer to Dr. Bailey, of Maine. Dr. Bailey, we would like to hear a few remarks from you.

DR. G. H. BAILEY: I would like, now that I am on my feet, to correct an impression that has been widespread in certain quarters, that Maine occupied somewhat a position of hostility to Massachusetts. Nothing could be farther from the truth. We have acted on the defence from the start, and are acting upon it now, never in any offensive sense. In regard to the quarantine law against Massachusetts, I feel proud of its results, and of the position I have occupied; and I feel more than ever like pursuing tuberculosis to my dying day. We have had good success under our law in Maine, in stamping out "contagious diseases," by the payment of a fair appraisal upon the basis of health, of which our State pays one-half; and

I believe that whenever Massachusetts modifies her present law and affords a fair compensation to owners of animals destroyed, it will prove the "open sesame" to success. I have never discussed the matter with Professor Stockbridge (who is a thorough disbeliever in indemnity); but I have broken many lances with Dr. Lyman, and I think he is beginning to see light. The probable appropriation of \$50,000 by the present Massachusetts Legislature is a reminder to me that you realize, at least, it is going to cost you something to get rid of tuberculosis. The law does not require the performance of a duty, and at the same time withhold the means reasonably necessary for its performance; and I again suggest that the efficacy of the law requires that the owners of diseased animals should not have to run too much counter to their own interests in submitting to the obligations to report their cases, and the only means of diminishing their resistance is to establish the principle of a fair compensation in the case of slaughter. It is to the principle of mutuality that recourse must be had - a principle which should be applied under the control of the State.

I do not know that the farmers of Massachusetts are any more honest than those of Maine; but with no law of indemnity, our farmers would sell you and me the milk of their cows as long as they gave any, and the meat when they did not, and we would be buying and selling, and eating and drinking tuberculosis, as you are to-day in Massachusetts. We have a great many such cattle surroundings in Maine as Dr. Parker had so faithfully described in your State; and while I did not suppose you had so many around the "Hub of the Universe" as we possess in Maine, I have seen some shocking examples of unthrifty dairy stock caused by unsanitary conditions. I discovered a whole herd of cows not long since, where the animals stood two or three feet higher behind than in front, through the accumulations of their own dung throughout the entire winter of 1893-4; and when I asked the farmer what advantage he thought he gained from such a state of affairs, he told me he could milk them easier when they were propped up behind! Among all this filth, I was surprised to find no case of disease; while in other cases, like those of our State College, for instance, where we killed the entire herd of 57 animals, the condition of the cattle, the ventilation of the buildings, and the care of the cows were all those of a model establishment. And this leads me to the opinion that there are some legitimate reasons why you have more tuberculosis in Massachusetts than other New England States. You have more model establishments, where the cows are forced for the production of milk and butter; more high-bred in-bred herds; in fact, more Jerseys; and it is among this breed that we have found three-quarters of all the cases we have ever condemned in Maine.

I suppose you gentlemen are all aware that our quarantine against Massachusetts still continues; but perhaps you are not familiar with the facts which led to its enactment in January, 1892. Early in December, 1891, our Board received notice that a cheap class of cattle were being brought by the carload into Maine from Brighton Market, and either sold for beef to lowpriced consumers, or sold to the farmers in Eastern Maine; and December 11th, we inspected a fresh arrival of 23 head, among which we found five bad cases of tuberculosis. Other similar cases rapidly developed;

with another class of high-bred and high-priced cattle, all of which had been purchased in your State for breeding purposes, and had proved to be diseased, we promptly decided to forbid further importations. Upon these facts, together with others since disclosed, we rely for the fullest justification and legality of our

During 1893 and 1894 we have destroyed and paid for fifteen out of twenty head of Jerseys that came to us directly out of a large Massachusetts herd and that have never been in contact with a single Maine animal since their arrival; and it has only recently been discovered that the herd from which they came was diseased, and the sire of many of those sent to Maine

Your Massachusetts Commissioners say in their last report (and I thank them for so kindly endorsing my position), "that one of the most serious obstacles to the working of their law regarding tuberculous animals has been encountered through unprincipled butchers, many of whom are established throughout Massachusetts, and make a business of buying up old worn-out or sick cows, many of them tuberculous, for a few dollars each, killing them and disposing of the meat to unsuspecting persons to be used as food."

This is just the class of cattle that were being brought so freely into Maine, prior to our notice of quarantine, and for which there is now no market in Maine or New Hampshire. If the owners of such animals knew they would be paid a fair compensation by the State, they would report such cases, and they would not be smuggled into the market. The whole business resolves itself into one of "hide and seek" to prevent the authorities from inspecting herds where the disease has been propagated for many years.
DR. J. B. Paige: The matter that Dr. Parker

brought up in connection with the sanitary condition of our stables I believe to be a matter of prime importance in relation to the control of tuberculosis. Perhaps I can best illustrate by reference to a case of my own.

There is a stable in our section in which about 125 or 150 animals have been kept. It is an old-fashioned farm barn. Something like four years ago the owner of the stable had all the cattle that had been kept on that farm slaughtered on account of tuberculosis. The front of the mangers and floors and the woodwork which came in contact with the animals was removed; and after the premises were renovated, they were disinfected by the use of corrosive sublimate and whitewash. A herd of cattle from the vicinity of Chicago were then put into the barn, and I believe that those animals at the time they were brought on from the West were in a perfectly healthy condition, and free What is their condition now? from tuberculosis. A tuberculin test shows that out of 109 animals on that farm to-day there are not less than 29 per cent. that are tuberculous. I think in this case that the sanitary condition of the stable had a great deal to do with the spread of the disease, and I am in doubt as to whether it is possible to rid one of these old-fashioned stables of the infectious material. I think that is rather an important matter to take into consideration with the use of tuberculin, and so strongly do I feel upon that point that I do not recommend the use of tuberculin among cattle kept under these unsanitary conditions, and among animals which are housed in stables and these taken together with our previous experience | that we know to be infected with this principle, for I

think it simply means an unnecessary destruction of a large number of animals that are not dangerous either to animals standing beside them or to human beings who use milk from them. What is the use of our destroying these animals that are so slightly affected when new animals may be put right back into the infected stable, and the disease is developed in them?

When we compare tuberculosis with contagious pleuro-pneumonia in reference to stamping out, I do not think we make a fair comparison. When you take out the last animal affected with pleuro-pneumonia, you are done with it until you get a new source of infection. It is not so with tuberculosis; for, besides the unsanitary condition, you have this infectious material in your stables to deal with.

PROFESSOR PEARSON, in answer to a question as to what amount of reaction he would consider as indicating tuberculosis, said: I do not think that we can take a fixed rise as indicating tuberculosis, and follow that in all cases, as in some animals there is a greater reaction than in others. Some animals will indicate a reaction of one degree, while in another there is a reaction sometimes of seven degrees; and I did see one case in which the reaction was but six-tenths, and still the animal had tuberculosis. If the inspection is made at night, and you find even a slight rise of temperature in the morning, I take that as indicating tuberculosis, because we know in healthy animals the temperature falls during the night, and in the morning it is usually one or one and a half degrees lower than in the evening; so that where it is a degree higher there is a difference of two degrees between this animal and one in a normal condition. I should take that as indicating tuberculosis. If there is no difference, I should make a second test; but usually the reaction on the second test is slower than the first one.

Dr. WINCHESTER: In regard to the second test, my reading has been that a great many animals will react at the first test, and it may be several months before they will react again; and I would like to make the inquiry whether the animal becomes accustomed to the effect of tuberculin for a certain time after the test.

Dr. Peters: I would like to give an instance. A week ago last Sunday I tested some cows with tuberculin, and the temperature went up pretty well, about to 106° or 107° — I am not able to state exactly, but there was a well-marked reaction. I reported the case to the City Board of Health; the City Board of Health reported to the Cattle Commissioners; and Dr. Osgood went out for the Cattle Commissioners to test these animals with tuberculin. The tuberculin I used was some that came from Pasteur's laboratory in Paris, and his came from the Bureau of Animal Industry at Washington. He also got a well-marked reaction among the cows. He had one which went to 107.3°. I don't think I had anything quite up to 107° — 106.8°, That is a case where the cattle something like that. reacted a second time, the second test being made three or four days after the first.

Dr. Osgood: When I first began the use of tuberculin I always reinoculated those that reacted in the I began by reinoculating after three first instance. I never failed to get a high reaction, except in one instance with a second inoculation, and, as Dr. Peters says, my reaction was higher than his. That was at the end of three days.

marks from some of the members present on the amount of tuberculin used in each dose. So far as I can learn, my experience on this question has been unusual.

During the past three months, I have had occasion to test eight herds with tuberculin. The individuals of these herds comprise a total of 167. Of these, 33 gave a reaction indicative of tuberculosis. Of these 33, 26 have been slaughtered, every one of which have on post-mortem examination been found to be the subject of tuberculosis. The lesions found have been characteristic of all stages of the disease, from the earliest to the most advanced. In many of them all that could be found would be one or two little tubercular masses not larger than a hazel-nut or a walnut; while in others the lesions were of long standing and extensive distribution, involving both lungs, pleura, bronchial and mediastinal lymphatic glands in one mass of tubercular disease. The dose of tuberculin used in these tests varied from a minimum dose of onethird of a minim to a maximum of two-thirds of a minim, and in no instance was this amount exceeded.

My prescription for, say, nine mature Jersey cows is as follows:

Tuberculin 6 minims Carbolic acid solution (one per cent.) . 84 minims Sig.— Dose for mature cow, ten minims.

For creatures a year old I use one-third of a minim. while for older cows of small size I use doses varying between those two extremes.

A month ago I had occasion to test a herd which had been tested by another practitioner ten or twelve weeks previously. So far as I can ascertain, the dose which was used was two and a half drops. Many members of the herd reacted, were condemned and killed, post-mortem examination fully proving the correctness of the diagnosis. But in the herd on the adjoining farm (a part of which herd he had tested at the same time) one of the cows had been tested and had failed to react, and consequently had passed as all right. This cow was slaughtered, and found to be in a worse condition than any animal he had condemned in either of the herds. In consequence of this, the owner of the first herd (all the members of which had been tested) did not feel very well satisfied, and had me retest the remaining eleven animals. I injected them with my usual two-thirds of a minim, and got in three animals the reaction indicative of tuberculosis. These animals were slaughtered forthwith, and after death examination revealed the following condition:

First Cow. — Both lungs extensively diseased, containing abscesses of various sizes, some filled with caseous and others with liquid pus. The mediastinal lymphatic glands represented by a tuberculous mass thirteen inches long and thicker than a man's arm. The bronchial lymphatic glands as large as a child's head and full of liquid pus. The pleura on both sides of the chest diseased. Cow well nourished and in good condition. Had been barren the last two years.

Second Cow. - A tuberculous mass in right lung, five or six inches in diameter, with semi-calcified walls and liquid and caseous contents.

Third Cow. — At upper border of right lung, one tubercular mass of recent origin about the size of an ordinary hazel-nut.

I thought this last case might have been developed since the original test. I have in my experience met DR. KINNELL: I had hoped to have heard some re- with such a nodule, just such a size, and showing such

a state of progress, in a calf six weeks old, and which calf I had reason to believe was infected through the milk. Now what are we going to say to all this? Must we say that the original dose, although not causing any reaction in the diseased animals, yet affected their systems in such a way as to render them susceptible to a second test? or rather ought we not to think that a small dose is much more reliable than a large one, and will obtain a reaction and give a result in cases where a large dose will prove negative?

To sum up, my experience leads me to make these assertions:

(1) That the dose of tuberculin ordinarily used is unnecessarily large.

(2) That a maximum dose of two-thirds of a minim is at least sufficient.

(3) That a small dose may be much better than a large one, as gaining a reaction where a larger dose will have no effect.

The tuberculin used is that manufactured in Germany and imported by Schulze, Berge and Koechl.

A reaction of two degrees was taken as indicative of tuberculosis. The highest reaction obtained (a rise of 6.4° F.) occurred in a cow whose lungs were found free from the disease, but the capsule of the spleen was the seat of well-developed tuberculosis.

Recent Literature.

First Annual Report upon the Births, Marriages, Divorces and Deaths in the State of Maine, for the year ending December 31, 1892. Pp. 238. Augusta: Burleigh & Flynt, State Printers. 1894.

By an Act of its Legislature, the State of Maine provided, in 1891, for the registration of the vital statistics of the State. By means of this legislation the registration laws of the six New England States may now be considered as fairly complete, and will in the future secure registration of greater or less efficiency for this section of the United States, comprising a population of nearly five millions (by census of 1890).

Moreover, the Maine Legislature has manifested its common-sense in placing the supervision of this work, in common with the other New England States (except Massachusetts) under the charge of a board which appreciates the importance of this branch of public work, namely, the State Board of Health. By this Act, the Secretary of the State Board of Health is made the Registrar of Vital Statistics for the State.

In this first registration Report of Maine, Dr. Young, the Registrar, has succeeded in presenting a clear and intelligent statement, and in reducing the deficiencies in the returns of marriages, births and deaths, to a much greater extent than has prevailed in the initial reports of other States. By this report it appears that the birth-rate of the State for the year 1892 was 21.2 per 1,000 of the living population. marriage-rate was 8.56 (persons married 17.12). death-rate was 18.4.

A notable deficiency in the birth-rate of some of the cities (Auburn, Belfast, Gardiner and Rockland, for example), suggests that fuller returns from these places would materially affect the birth-rate of the State at impression that the contributors have not only gathlarge.

A valuable feature in the report is the frequent introduction of comparative international statistics, the importance of which must be fully recognized.

Much of the accuracy of the report, and especially of that portion which deals with the causes of death, is due to the fact that the Registrar returned more than 2,000 certificates to the clerks of cities and towns for fuller information and the correction of errors.

The compiler of the report recognizes the importance of beginning with a system of classification and nomenclature which is in accord with the progress of medical science; and while making no radical changes, he has succeeded admirably in bringing his system into harmony with modern medical belief and practice. The following quotation from page 224 sufficiently ex-

plains his position in this respect.

"A registrar about to adopt a system of classification of the causes of death for his State must be very uncritical and easily satisfied to be pleased with any of the arrangements which he finds in use. In the various States of the Union, the classifications differ among themselves enough so that he who would compare the statistical results of one State with those of another must constantly be on the alert that the classes or groups of diseases compared contain the same individual causes of death. Recent investigations into the causes of disease have so changed our conceptions of the nature of many of them, that the existing nosologies appear antiquated. As Mr. Wynter Blyth has said, 'the present classification was based upon an old – a dying — pathology.'

"Nevertheless, the compiler of this report deems it altogether out of place to attempt to satisfy himself with a rearrangement. He has, however, ventured a few changes which will, undoubtedly, place a few of the individual causes of death and groups of diseases more in line with the places to which they will be as-

signed in the future."

It is fortunate that in Maine this subject of nosology is entrusted to competent authority. In Massachusetts, on the other hand, no legislative authority exists for placing this question in the hands of any one who is competent to deal with it intelligently; and, as a result, the same nosology is in use to-day which was adopted in 1855, notwithstanding the urgent need of placing it in line with modern medical progress.

Medical Jurisprudence, Forensic Medicine and Toxicology. By R. A. WITTHAUS, A.M., M.D., Professor of Chemistry, Physics and Hygiene in the University of the City of New York, etc., and TRACT C. BECKER, A.B., LL.B., Counsellor-at-Law and Professor of Criminal Law and Medical Jurisprudence in the University of Buffalo. In four volumes. Vol. II. New York: William Wood & Co. 1894.

The favorable opinion which the JOURNAL expressed concerning the first volume of this work is applicable, without reserve, to the second volume, which has just appeared. The several chapters have been written by men who have earned the title of experts in the high-The est and best sense. The treatment of the various subjects is characterized by an originality and a thoroughness which place the work in the front rank and give to it a genuine encyclopedic quality. The reader cannot fail to receive from a study of its pages a distinct ered what is best from the older literature of forensic

medicine, but have added much that is valuable out of their own experience and original research.

Propriety forbids special commendation of selected chapters, and space cannot be taken for a critical notice of each title. We commend the entire book to our readers' favor, and simply add that it contains chapters on the following subjects: identification of blood and other stains and of human hairs (E. S. Wood); abortion and infanticide (Cameron); pregnancy, labor, the puerperal state, rape (Edgar); sexual incapacity, unnatural crimes (Rosse); railway injuries (Outten); simulated diseases (Parker); survivorship (Becker).

The book shows excellent pictures, for which the publishers deserve credit, in its clear type and acceptable illustrations. A table of all the medical and legal cases cited in the text is appended to the volume and a full index adds to its value as a work of reference.

Trephining in its Ancient and Modern Aspects. By JOHN FLETCHER THORNE, M.D., D.Sc. (Hon.), F.R.C.S. (Ed.), etc. Pp. 138, illustrated. London: John Bale & Sons. 1894.

This little work contains much that is historical. The author's idea is to rescue from oblivion valuable matter now lying forgotten among the writings of our professional ancestors. His style is attractive, and the tale an interesting one. It also contains much that is modern.

The first seventy pages are compiled from the early literature of the trephine, show its development, and contain a description of its modern application to head and spinal injuries. One finds interesting descriptions of former methods of treatment; of curious instruments and dressings. The subjects of the succeeding chapters are trephining for intracranial extravasation, abscess, cysts, tumors, meningitis, epilepsy, paralysis, idiocy, mania and gunshot wounds. The book concludes with a short chapter on trephining the spine, which is a discussion of the advantages and disadvantages of this operation; and a longer one entitled "Remarks on Trephining," which enumerates the indications for operative interference in these cases, describes some of the technique of modern operators, and discusses cerebral localization and the significance of clinical symptoms.

The book is an interesting one, especially to instructors in surgery, and is a good historical review of the subject in a convenient form.

Practical Manual of Diseases of Women and Uterine Therapeutics for Students and Practitioners. By H. Macnaughton Jones, M.D. Sixth edition. London, 1894.

That this work has reached its sixth edition testifies to the favor with which it has been received by the profession. It is more a manual for handy reference than an elaborate system, and as such serves its purpose very well. The author has re-written many parts to bring them up to the present status of our knowledge and has added considerable, so that the work is a thoroughly practical exposition of the subject. While in many minor details its teaching differs from the general methods in vogue in America, yet it is a safe and helpful book to follow. It is full of suggestions as to treatment based on the author's experience, which are very valuable.

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BOVINE TUBERCULOSIS IN MASSACHUSETTS.

WE offer no apology to our readers for the large amount of space in this issue of the JOURNAL devoted to a consideration of Bovine Tuberculosis. Bovine tuberculosis and human tuberculosis are more intimately related than is generally recognized even by the medical profession, and we believe comparatively few of the medical profession realize the extent of tuberculosis among cattle, or are clear in regard to the value or methods of exhibition of tuberculin as a diagnostic test. It may be that not one of our readers knows what a "bologna cow" is, and yet a considerable commerce exists in that kind of animal.

A month after the meeting of the Massachusetts Veterinary Association which we report, the State Legislature passed an act of sixty-one sections, entitled "An Act to Codify and Consolidate the Laws relating to Contagious Diseases among Domestic Cattle." An appropriation of \$25,000 was made to carry out the provisions of this act during the balance of this year.

Under this law the cattle that have been owned in this State six months prior to condemnation are, if condemned by the State Cattle Commission, paid for by the State at half their agreed value, regardless of their tuberculous condition, if the autopsy confirms the fact of infection. If the autopsy shows no disease, the full value of the animal will be paid. In the case of cattle from without the State there is no compensation if disease is proved, but full value is paid if no disease is shown at the autopsy. The Commission is careful, in every case of condemnation, to establish the value of the animal, either by agreement with the owner or by appraisal, before the animal is killed. There are about 250,000 head of cattle in Massachusetts. If ten per cent. of these are tuberculous, at an average value of \$34 a head it would cost the State \$425,000 to recompense the owners.

The tuberculin test is used to establish the existence of tuberculosis, and much confidence is felt in it by the Commission. The usual dose is two cubic centimetres of the ten per cent. solution. The cost price of such a dose is about twenty cents. The Commission is using about \$120 worth a week, but the tuberculin is furnished free by the Department of Agriculture in Washington, and is of very reliable quality. The experience of the Commission in the enforcement of the law during one week at Brighton and Watertown would indicate that at least twelve per cent. of the cattle in this State are tuberculous.

We hear of a case tried in the police court in Lowell two weeks ago in regard to the purchase of a cow for two dollars, and the subsequent sale of the carcass to a manufacturer of sausages for two dollars and a half, one cent a pound.

Inspectors found the cow was riddled with tuberculosis, and could not have lived a month. The following items are taken from the testimony. The original owner, on being asked if he considered the animal fit for food, said the cow was good. The counsel inquired, "Was it a good beef cow?" "No," answered the owner, "but it was a good 'bologna' cow." It then appeared that the final purchaser manufactures five thousand pounds of bologna sausage a week, and buys much meat at one cent a pound!

We reproduce a little more of this instructive testimonv:

- "Do you buy many cows?" was asked of the first purchaser.
- "Yes, a good many.
- "What do you pay for them?"
- "Wall, all prices."
- "Do you get many for two dollars?"
- "Yes, bologna keows."
- "What's a bologna cow?"
- "A thin keow; a two-dollar keow."
- "Well, where do you get your authority for calling a thin cow a bologna cow?"
 - "Why, from the keow."
- "Would you sell the carcass of a cow that had died?"
 "All keows has got ter die. Ef you kill 'em they die."
- "Well, would you sell the meat of a cow you call a bologna cow to a butcher?"
- "Of course, ef he gave me my price. Ef a man wanted to make a beefsteak out of it, it wouldn't be my business."
- "Then you would as soon poison a man with a beefsteak as a bologna sausage; you don't look at the moral aspect?" asked the examiner.
- "I don't know what you're talking absout."

The Cattle Commission is evidently at work none too soon.

The State of Massachusetts has undertaken through the Cattle .Commission something which has never been undertaken before. The Commission believes the State can be freed from bovine tuberculosis, and can be kept free. The price is a small one to pay for the accomplishment of such an object, which should be of the very first concern to the medical profession. There will undoubtedly be a strong effort made to turn back to the old conditions. We hope the State will persevere in its present course.

DIPHTHERIA AT DETROIT.—It has become necessary to close two public and two parochial schools at Detroit, Mich., owing to the rapid spread of the epidemic of diphtheria. About twenty cases a day are now reported among school children in that city.

PRIMARY AMPUTATIONS IN THE TRAUMA-TISMS OF CIVIL LIFE.

In an address on the above important subject delivered recently before the New York State Association of Railway Surgeons, T. H. Manley, M.D., maintains the following thesis: That primary amputations in the traumatisms of civil life should be discontinued. His contention may be reduced to the following propositions:

- (1) That unless a shattered limb has been traumatically amputated, or as he puts it, "quite totally destroyed," no one can tell whether restoration of circulation is possible under conservative treatment or not.
- (2) In waiting to determine whether circulation can be restored, we also gain the opportunity for establishing reaction after the shock of the accident, which is often severe, so that the operation may be done under circumstances more favorable for preserving the life of the patient.
- (3) Resection and modern osteoplastic operations now enable us to save many limbs which would heretofore have been ruthlessly sacrificed.
- (4) By discarding primary amputations we are enabled to await the formation of a line of demarcation between living and dead tissues, which will show us exactly how much of the limb it is necessary to sacri-
- (5) The charge that the chances of septic infections, gangrene and tetanus are increased by discarding primary amputations, is not supported by facts.
- (6) Almost any description of a lower extremity, free from pain, is so superior to the most elaborate prothetic apparatus, that when there is the slightest chance of preserving even a shortened or distorted limb, that chance should be taken.

The first of these propositions, namely, that in cases where there is a reasonable probability that circulation can be restored, the surgeon should wait, hardly admits of question.

The second, which simply means that in cases of severe shock, it is better to wait for the establishment of reaction before operating, is also a well-known surgical axiom.

It would be difficult to question the third statement, namely, that by resection and other osteoplastic operations, limbs can be saved which would formerly have been sacrificed. Whether it was "ruthless" to sacrifice limbs which at the stage which surgery had reached at the time of operation could not be saved, we think admits of doubt.

The statement that in the serious crushes of railway practice, which form by far the larger number of the cases coming to amputation in modern civil practice, the chances of sepsis are not increased by waiting, we think admits of serious doubt. We have to deal with tissues — fat, muscle, connective-tissue, etc. — reduced to a state of pulp, with dirt, grease and all possible kinds of filth thoroughly ground in. By leaving such a mass directly connected with the actively absorbing lymphatics of healthy tissue, we are (1) taking the

largest chances of direct infection, (2) furnishing a most favorable culture medium (the crushed tissue and blood-clot), (3) affording the most abundant facilities for absorption.

In the first place, it is impossible thoroughly to disinfect crushed and mangled tissue, and, in the second place, the attempt at disinfection is a more serious and exhausting operation than an amputation.

We think the experience of most surgeons will bear out the statement that, where an unsuccessful attempt has been made to save an injured limb, the necrotic member has proved often the source of rapid septic absorption, so that marked cachexia has supervened, and secondary amputation had to be performed through infected tissue, the flaps could not be safely sutured, and convalescence was tedious and painful. A primary amputation means usually first intention, and a speedy and painless convalescence; a secondary amputation, suppuration, frequent, tedious and painful dressings, and a slow recovery.

With regard to waiting for the line of demarcation, we must admit that while it is a question of operating at one or the other of two widely separated points,—between amputation below or above the knee-joint, for instance, it is in most cases better to wait.

When, however, it is a question merely of sacrificing an inch or two, more or less, of the tibia, the advantages of a primary amputation more than counterbalance those to be gained by waiting for the line of demarcation.

With regard to the last proposition, there can be no doubt that there has recently been a tendency in some of our large hospitals to perform amputation of the lower extremity at the point of election, that is, about the junction of the lower and middle thirds of the tibia in cases in which a more conservative amputation — Syme's, Pirogoff's or Chopart's, for instance — might have been performed, and would have given the patient a good end-bearing stump of the same length as the uninjured limb. The argument for amputation at the so-called point of election has been that an artificial limb which can be advantageously fitted upon such a stump, is less unsightly and as good for purposes of locomotion as any shoe which can be worn after a Syme's or Pirogoff's amputation.

On the other hand, according to the statement of one of our best-known makers of prothetic apparatus, a shoe can be fitted to a Syme's or Pirogoff's amputation stump, which looks exactly as well as the artificial foot, and is superior to the latter for purposes of locomotion. It would seem to stand to reason that an end-bearing stump would be superior for prothetic purposes to the cone-bearing stump which is obtained by the amputation at the point of election; and in the case of a poor man, who can ill afford the expensive artificial limb, the superiority of the former can hardly be questioned. A former objection to the Syme's or Pirogoff's stump, namely, the contraction of the tendo-Achillis, can now be overcome by section of that tendon, at the time of the operation.

Apropos of any such question as the one under discussion, the fact that it is most dangerous to lay down a hard and fast rule, to which every case must be subjected, has so often been proven in surgery, that it should never be forgotten. Although one may make a rule that primary amputation should never be performed, there, nevertheless, may occur cases in which primary amputations may be distinctly indicated.

The wise surgeon is not he who follows anybody's rules to the exclusion of common-sense and the peculiar conditions applicable to each individual case, but he who judges each case on its own merits, and acts according to his judgment.

FOOTBALL AT SPRINGFIELD.

WE must confess to a distinct disappointment at the way in which the Harvard-Yale game of football at Springfield was conducted this year. The promise of reform in rules and discipline has not been kept. The number of disabled men was unusually great, and there were several serious injuries; that these were in every case the result of "accidents" it seems to be difficult to admit. The rules may be amended to any extent, but it profits nothing if they are not or cannot be enforced. The penalty for slugging, or for purposely attempting in any way to injure an antagonist cannot be too severe or too severely enforced, if this game is to be continued as a competitive sport among college men. That a player may with impunity jump on an antagonist prostrate on the ground with the ball, after the whistle has been blown, and dislocate his victim's clavicle, should be an impossibility. What the umpire does not see, however, is supposed not to occur. In so far as the umpire is blind he may, at least, in that particular, be said to be a representative of justice: the best pair of eyes may really miss some of the incidents of the gridiron. Had the penalty of disqualification, however, been rigidly enforced from the beginning of the first half of this game, there would, we are convinced, have been fewer subsequent "accidents."

We still are of the opinion that there is much good in competitive athletics, and much good in the game of football, but the game will not continue to be tolerated if men are tolerated in it who permit themselves to behave like brutes. If there are such members of teams, there should be sufficient suitable supervisors of the game — be they called umpires, referees or linesmen — to render these brutes innocuous by instant and impartial disqualification.

It is generally recognized that the Harvard men were extremely well trained this year from the physical point of view, and much credit is due their trainer.

MEDICAL NOTES.

THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION. — The Southern Surgical and Gynecological Association held its seventh annual meeting at

Charleston, S. C., on November 13th, 14th and 15th, under the Presidency of Dr. Cornelius Kollock. A great many interesting papers upon a large variety of subjects were read during the six sessions of the meeting.

THE SONG OF THE GIRDNER TELEPHONE BULLET PROBE.—S. Morris Conant, in the *Medical Record*, perpetrates the following:

"After the 'shootin's' over,
After the scrap is done,
After the 'Dago's' punctured,
After the Cowboy's fun (?)
Many's the gun 'not loaded,'
I can attend to all;
Merrily I will meander
After the Ball."

FATAL FOOTBALL ACCIDENTS. — It is reported that at Shreveport, O., on November 24th, a football player received a fracture of the spine, and that he lived only two hours. A boy, fourteen years old, is also reported to have been struck violently on the head during a football game at Worcester, Mass., on November 25th. He is said to have been able to walk home, though slightly dizzy, and to have been found dead in his bed the following morning. The story of this case is certainly very suggestive of hemorrhage from the middle meningeal artery.

BOSTON AND NEW ENGLAND.

A FATAL ACCIDENT AT THE YOUNG MEN'S CHRISTIAN ASSOCIATION GYMNASIUM.—An instructor at the Boston Y. M. C. A. gymnasium, slipped while attempting a somersault from the shoulders of a companion, and fell, striking on his head. He died in a few minutes. Death is said to have resulted from fracture of a cervical vertebra.

A YALE STUDENT CONTRACTS TYPHOID FEVER FROM WESLEYAN OYSTERS.—A Yale student who attended the banquet at Wesleyan University, Middletown, partaking presumably of the infected oysters, is ill with typhoid fever.

A Public Hospital for Greenfield, Mass.—At a preliminary meeting looking toward the establishment of a public hospital for Greenfield, Mass., held November 18th, the plan met with enthusiastic acceptance. A meeting for organization was announced for Tuesday evening, November 26th.

DARTMOUTH COLLEGE MEDICAL DEPARTMENT.—Graduation exercises of the Medical Department of Dartmouth College took place Tuesday evening, November 20, 1894. A class of twenty-eight members received their degrees.

NEW YORK.

DIPHTHERIA AT YONKERS.— Since November 10th, when five cases were reported, there has been a considerable outbreak of diphtheria at Yonkers, and on November 16th the hospital for contagious diseases was opened for diphtheritic cases. The Health Officer, Dr. Valentine Brown, reports that the disease is not confined to any one locality, and that while the

public and parochial schools have not been closed, every pupil is thoroughly examined by a physician every morning. In case the child presents any sign of illness it is immediately sent home, with a request to the parents that medical attendance be promptly summoned.

A LEGACY TO THE MANHATTAN HOSPITAL AND DISPENSARY. — The late James Hood Wright, of the firm of Drexel, Morgan & Company, who, during his life was the principal benefactor of the Manhattan Hospital and Dispensary, situated at Amsterdam Avenue and 131st Street, has provided very handsomely for that institution in his will. It is not yet known how large the legacy is, but it will probably amount to several hundred thousand dollars, and of this one hundred thousand dollars may be used as a building fund.

THE WOMAN'S HOSPITAL. - The thirty-ninth annual meeting of the Board of Governors of the Woman's Hospital was held at the institution on November 22d. The report of the Medical Board, which was read by Dr. Bache Emmet, one of the attending surgeons, showed that during the year ending September 30, 1894, the total number of patients treated in the indoor department was 802 (262 of whom were free patients), and in the outdoor department, 5,096. Of the former class 383 were discharged cured, 283 improved, 44 not treated. There were 27 deaths during the year. The President of the Board of Governors read the annual report of that body, and made an elequent appeal in behalf of the new hospital buildings, which are to be located at the corner of 92d Street and Central Park, West; able and interesting addresses were also delivered by Dr. Paul F. Mundé and by the Rev. D. Parker Morgan.

Miscellanp.

ANOTHER CASE OF GUNSHOT WOUND OF THE HEART.

DURING the past year there have been reported several cases of gunshot wound of the heart, not immediately fatal. Dr. J. R. Church reports 1 a case occurring in the services of Dr. Kerr at the Emergency Hospital in Washington, D. C.:

A. W., a white man, sixty-seven years old, was brought into the receiving-ward of the Emergency Hospital at 5.40 p. m., suffering from a gunshot wound of the thorax inflicted at 4.50. Upon his admission he was in a state of collapse, the features pinched and pale, the body covered with a clammy perspiration, and the dressings over the wound stained with blood. The wound which had been made by a pistol-bullet (32 calibre), was situated one-and-a-quarter inches below the mammary line and a little to the left of the centre of the sternum, and through it considerable blood had escaped. The pulse was almost imperceptible, the respiration fair, the mind wander-

¹ Medical News, October 27, 1894.

ing. The man was put to bed, the usual therapeutic agents were employed, and transfusion was performed; but the condition became steadily worse, and death took place at 7.45.

A post-mortem examination was made, which showed that the ball had pierced the sternum just above the xiphoid cartilage, and entered the pericardium to the right and at the lower part. The sac was filled with blood, both fresh and clotted. The heart was pierced through the right ventricle, the anterior wound being one-half inch in diameter. The wound of exit was five-eighths of an inch in diameter and ragged. The diaphragm was perforated and the omentum wounded in several places.

The ball itself was lodged under the skin posteriorly between the ninth and tenth ribs.

The hemorrhage had been very fierce, the pericardium being choked with blood, the pleural cavity containing a large quantity, and the peritoneal cavity considerable.

RESOLUTIONS UPON THE DEATH OF GEORGE . W. DAVIS, M.D., M.M.S.S.

AT a regular meeting of the Hampden District Medical Society held October 16, 1894, the following resolutions were unanimously passed:

Whereas, George W. Davis, an esteemed member of this Society has been removed by death,

Resolved, That we hereby express our appreciation of his abilities and of his signal devotion to his professional work, and that we tender our sympathy to his bereaved family in their sorrow.

Resolved. That this resolution be entered upon the records of the Society; that a copy of the same be sent to the family of the deceased; and that a copy also be sent to the Springfield Republican and the Boston Medical and Surgical Journal for publication.

F. W. CHAPIN, E. E. MARRYATT, M. CALKINS,

MUNICIPAL SUPERVISION OF MILK-SUPPLY.1

Another advance in the line of controlling and eradicating tuberculosis has been taken recently in Philadelphia, where the Board of Health has instructed the chief inspector of milk to indorse as untrustworthy all certificates testifying to the freedom of herds of milch-cows from tuberculosis that are not based upon the use of the tuberculin-test by trained veterinarians. A register is to be kept in which shall be recorded all herds of milch-cows that supply the city of Philadelphia that have been certified as free from tuberculosis by the method approved by the Board of Health, as well as such as have not been reliably certified and which are to be designated as "suspicious." These records shall also contain the names of dealers supplied from the various herds and shall be open to the inspection of the public. All producers of milk supplying the city of Philadelphia who fail after sixty days' notice to furnish a certificate or clean bill of health of their cattle, based on the method of examination demanded by experts and approved by the Board of Health, shall be reported to the Board and be liable to have their milk rejected as being suspicious.

¹ Medical News, October 20, 1894.

THE PHYSIOLOGICAL EFFECTS OF CYCLING.1

THE physiological effects of cycling have recently been studied by Dr. Blazhevich of St. Petersburg, who publishes his results in his "Graduation Dissertation." He tabulates 270 observations on 104 individuals of both sexes and various ages, distinguishing between ordinary riders and those who train themselves for, and ride in, races or attempt to cover long He finds that the play of the chest is diminished immediately after riding, especially in the cases of women and children and of men racing or commencing cycling, the diminution amounting in these cases to from 1 to 1.5 centimetres. In men accustomed to the exercise the effect was scarcely perceptible. The general effect of the summer's riding upon the male votaries of the sport was, according to Dr. Blazhevich, practically nil. In women and children the effect was slightly to increase the vital capacity. The arm power was found to have increased more than the leg power in young persons and in beginners, but in the case of men of mature age who had previously been accustomed to cycling this was not so evident. Speaking generally, the effects of cycling on the system were found to be very similar to the phenomena noticed by Tsymkovski in soldiers who had been running, and by Gruzdeff and Passover as resulting from rowing.

Correspondence.

THE DANGERS IN SPARRING FROM BLOWS UPON THE JAW.

Boston, November 24, 1894.

MR. EDITOR: — The recent unfortunate sparring accident emphasizes anew the dangers attending this sport, and more particularly the danger from blows upon the jaw.

The mechanism of these blows seems not yet thoroughly understood. That at Syracuse appears to have been delivered upon the point of the jaw. The fatal blow in the sad accident at Harvard not long ago was received upon the angle of the jaw. The former produced death, we are informed, through hemorrhage (the location of which it would be of interest to learn); in the latter case there was hemorrhage from a lateral sinus. It may be considered, then, beyond dispute, that the force of a blow, not necessarily very violent, on the jaw, may, if the direction is favorable be transmitted through the bones of the skull, and produce fatal hemorrhage. The Cambridge accident, together with a case reported to me by Dr. J. G. Pinkham, of Lynn (in which hemorrhage occurred from the longitudinal sinus), point to the sinuses as structures specially liable to rupture from external violence unattended by fracture.

In the study of the subject suggested by the Harvard case, I learned that a sharp distinction was to be made between this variety and the so-called "knock-out" blow, which if I understand correctly, is rather of a swinging character delivered upon the side of the jaw, most effective when the jaw is relaxed. I am informed that certain blows on the side of the neck may come into the same category. It would appear that the results of this blow, while equally alarming in appearance, through causing instant unconsciousness, are produced by a different mechanism from that of those previously alluded to. The usual rapid return to consciousness without further symptoms throws hemorrhage out of the question; simple concussion, again, seems hardly a satisfactory diagnosis in view of the comparatively little force which produces unconsciousness, in spite of the fact that the elasticity of the joint would naturally lessen the amount of jar. It would seem, therefore, that some

1 Lancet, October 20, 1894.

other theory must be applied than that the jar was transmitted to the intra-cranial contents. Of the structures suggested as possible sufferers in a recent editorial article in the JOURNAL, namely, the medulla oblongata, the auditory apparatus, and the vessels and nerves at the base of the brain, all excepting the vessels and nerves may be perhaps excluded, because injuries to the skull itself would seem fully as liable to affect these parts as blows upon the jaw. With regard to the blood-vessels, it is hard to see how these structures can be so affected as to cause unconsciousness, though it is not improbable that sudden compression of the jugular vein may favor tension in the lateral sinus, thus favoring hemorrhage. We are left, therefore, with the nerves, of which the sympathetic and the pneumogastric first suggest themselves.

These considerations led Dr. Harold Williams and myself to try a few experiments by way of studying the effect upon the circulation of blows on the jaw. The results were quite striking. When Dr. Williams struck himself with moderate force with the fist upon the right side of the clenched jaw, no special symptoms resulted beyond slight dizziness and disagreeable sensations, with momen-tary acceleration of the pulse. When muscular resistance was offered no effects were produced, and no alteration of pulse. When the same blow was used with a little more violence, striking the side of the relaxed jaw about half-way from the point to the angle, decided dizziness and faintness followed, together with pain in and around the left ear and a disagreeable full feeling. The pulse at the wrist meantime, suddenly stopped, then became rapid for a few beats, then slowed to sixty (previously eighty). Fifteen minutes later the pulse had risen to sixty-eight, and the disagreeable sensations were passing off. On account of the unpleasant features the experiment was not pursued.

Mr. O'Connell, instructor in sparring at the Boston Athletic Association, on being interviewed, described to us a number of instances of "knock-out" blows the effects of which were quite as suggestive of sudden cessation of heart-beat as of cerebral concussion; he emphasized also the importance of keeping the teeth clenched in sparring. He then voluntarily struck himself on the side of the jaw quite violently, with the result of weakening and slowing the pulse to fifty-four, and producing pain over both ears last-ing fifteen minutes. We were unwilling to allow him to

experiment further.

The most rational explanation of the circulatory symptoms noted, as well as of the disagreeable sensations, seems to be an irritation of the pneumogastric nerve, which passes at its exit not far from the articulation of the jaw.

An experiment tried on an etherized dog in the physiclogical laboratory of the Harvard Medical School through the courtesy and with the assistance of Dr. Bowditch, proved negative, a fact which favors rather than controverts the theory, inasmuch as the pneumogastric nerve in the dog is widely separated from the articulation of the jaw through the intervention of the tympanic or auditory bulla, a structure prominent in the dog, but wanting in man. The same structure is prominent in the skull of the monkey, which would render experiments on this animal ing the mortality therefrom. futile.

These incomplete experiments point to the pneumogastric nerve as the sufferer from lateral blows upon the relaxed jaw, while cerebral hemorrhage must be feared from blows upon the point or angle of the jaw when so directed that their force is transmitted to the bones of the cranium. Whether the former, or so-called "knock-out" blow, has produced death, I am unable to say; that the latter variety of blow has proved fatal we have sad evidence. ject of this communication will be attained if it encourages such study of the subject as may be pursued without danger and may place our knowledge upon a sufficiently scientific basis to assist those in authority to eliminate as far as possible, at least in amateur contests, the dangerous element in this useful sport. If the subject has been already covered, I should be glad of the references.

Yours respectfully, GEORGE L. WALTON, M.D.

THE PREVENTION OF DIPHTHERIA.

BOSTON, November 21, 1894.

MR. EDITOR: — The unusually large and increasing number of cases of diphtheria in the city of Boston prompts me to ask for a little space in the columns of the Journal to emphasize and direct attention again to what seems to me at present the most efficient means of checking the spread of this disease and reducing its mortality; and I think the efficacy of this measure will be better appreciated if we first call to mind the mode of contagion and the nat-

ural history of diphtheria.

The diphtheria bacillus flourishes chiefly in the throat and is not a motile bacillus, but must be carried to the healthy individual. This is done principally by direct transferrence from mouth to mouth, or hand to mouth or nose. By mouth to mouth I mean, for example, a healthy child may catch diphtheria by biting from the same apple, putting the same toys in the mouth, using the same handkerchief as a child in whose throat diphtheria bacilli are present, or by kissing such a child; or a mother may use her own handkerchief for a neighbor's ailing child, and thus unwittingly carry the disease to her own children. Children invariably put their pencils, for example, into their mouths; and as in the public schools the slate pencils are gathered up every day and redistributed at random on the next day, it is easy to see how diphtheria originating with one child might spread in a school. The closer contact among children, and the habit they have of putting things in their mouths, shows why the disease is more pre-alent among them than among adults. The bacilli may get on to the hands of those who are taking care of or are about persons ill with diphtheria, and unless the hands are carefully washed may be transferred to the mouth at the next meal on a piece of bread, for instance. Again, the bacilli may live for months in the garments of a person who has been ill with diphtheria. But I need not multiply examples as to the mode of contagion.

The bacilli, once conveyed to the mouth, may remain in the throat some days even, without showing any sign of their presence, and in some cases may produce no symptoms of disease, although during this period such individuals may give diphtheria to others; but in the usual course of things the presence of bacilli in the throat is followed probably after a day or two by congestion, and later by false membrane. This membrane may disappear from the throat before the bacilli. Therefore in the beginning and at the close of the disease an individual is especially dangerous to the community, because in the first case his diseased condition is unsuspected or thought of slight consequence, and in the second case because the normal appearance of the throat, although the bacilli may still be present, leads to the belief that the danger of contagion from him is past. The bacterial test, therefore, is of special importance in these two stages of the disease, as it is the only means of detecting the diphtheria bacilli; and the thorough use of this test is the best way at present in my estimation of checking the spread of diphtheria and reduc-

Two years ago the use of the bacterial test was begun in this city at the Boston City Hospital, and later bacterial tests were made in the laboratory of the Harvard Medical School. The Board of Health in New York has applied this test to over 14,000 cases; and a system somewhat similar to the one employed there has, as we know, been lately introduced in Boston by our Board of The introduction of this system gives the city of Boston an opportunity to carry out the method I have advanced at medical meetings and which I have employed for some time past, namely, the application of the bacterial test to the throats of all the members of a household where a case of diphtheria has occurred, although all these persons except the patient seem perfectly well. By this method I have often detected in each household one or more wholly unsuspected cases of diphtheria. These persons were isolated promptly; treatment was begun early, and all recovered.

It is obvious how the spread of diphtheria would be lessened and the mortality diminished were such a system generally introduced, especially if it were made use of in the schools. For example, if a girl or boy were taken ill with diphtheria, the bacterial test should be applied immediately to all the children in the same schoolroom. The cost to the community of making these tests is small, and the method more humane and far less expensive than that now employed of waiting until the unsuspected patients, (the schoolmates of the original patient) need great care themselves, or may have also given the disease to others; for this may be done in the very early stages before their indisposition is suspected. This thorough method of applying the bacterial test has, as already indicated, the double advantage of checking the spread of the disease and of giving an opportunity for early treatment, thus reducing the mortality; for if efficient treatment is employed in the early stages of the disease, the patients usually recover.

It, therefore, seems to me that public sentiment should be created in favor of applying the bacterial test, not only to those who have sore throats, but if these sore throats prove to be cases of diphtheria, to all those who have been much in contact with these individuals, that is, for example, to the other members of the household, or in case of the patient being a child at school, to all the children who have been in the same schoolroom. It would be well to have our whole metropolitan district included in the scheme for applying the bacterial test. The tests could all be made in one laboratory, with convenient stations for collecting the tubes. Very truly yours,

FRANCIS H. WILLIAMS, M.D.

TREATMENT OF CONGENITAL DISLOCATION OF THE HIP.

CAMBRIDGE, November 28, 1894.

MR. EDITOR: - In a communication published in yesterday's number of the JOURNAL (November 22, page 523), Dr. H. G. Davis says that in cases of congenital dislocation of the hip the contractions of muscles and other tissues tending to maintain the dislocation will yield readily, without any operation, to gentle but continuous extension, allowing the head of the femur to be easily brought back to its place in the acetabulum. This statement is perfectly correct; but the natural inference therefrom, namely, that therefore no operation or other treatment is necessary, is misleading. In such a case the difficulty is not to get the head of the femur into proper position, but to keep it there. And the keynote of the case is the fact that nature has failed to provide the usual means of keeping it there. The acetabulum is so shallow as to be functionally useless, and hence the dislocation. Until an artificial acetabulum has been formed the head of the femur cannot be expected to remain in place, while the great muscles of the thigh are constantly pushing it upward; and this is the object of operation. Dr. Davis's case was not a typical one; for the acetabula seem to have been fairly efficient, while the dislocations were due to another cause, infantile paralysis.

Sincerely yours, CHARLES C. FOSTER, M.D.

MAY MEDICAL EXAMINERS TESTIFY AS EX-PERTS AGAINST THE GOVERNMENT?

Mt. GILEAD, November 24, 1894. MR. EDITOR: - May I ask, What right has an officer, appointed by the government, employed by the government, and paid by the government, and with a good round salary at that, to go into court as an expert, and be paid as a medical expert by persons under suspicion of crime, and there testify against the very government which employs him?
Yours truly,
BACKWOODS.

Answer. — The same right that a government employé has to use the name of the government which employs him, in endorsing a brand of beer for which a price (namely, a few barrels of beer) is paid. JACK FROST.

THE ANTITOXIN TREATMENT \mathbf{OF} DIPH-THERIA AT THE TROUSSEAU HOSPITAL.

Boston, November 26, 1894.

MR. EDITOR: - The following brief extract from a personal letter dated November 13th, from M. Sevestre (of the Trousseau Hospital, Paris, well recognized as one of the most conservative and skilful practitioners in that city), regarding the antitoxin treatment of diphtheria may be of

"In a few words, at the expiration of twenty-four to thirty-six or forty-eight hours after the injection, a peeling and disintegration of the membrane, a return of appetite; in case of croup, possibility of deferring tracheotomy, and when it proves necessary, the frequent possibility of removing the tube at the expiration of one or two days. mortality (counting even the cases which die a few hours after entering the hospital) of 12 to 13 per cent. instead of about 50 per cent., which is the average during preceding You see this is sufficiently enyears at this same season. couraging; but a cure in all cases is not to be looked for, and perhaps there are some little inconveniences attending the treatment. This last is a point to be studied."

Very truly yours,

F. GORDON MORRILL, M. D.

RECORD OF MORTALITY FOR THE WEEK ENDING SATURDAY, NOVEMBER 17, 1894.

	ė	å,	ğ	Per	centag	e of d	eaths f	rom
Oitles.	Estimated population.	Reported deaths in each.	Deaths under five years.	Infectious diseases.	Consump- tion.	Typhoid fever.	Diphtheria and croup.	Scarlet fever.
New York	1,956,000	_	_	_	_	_	_	_
Chicago	1,600,000				-	. =		
Philadelphia .	1,139.457	374	128	15.60	9.36	1.82	9.88	1.80
Brooklyn	1,043,000	330	92	15.00	16.50	1.50	10.50	-
St. Louis	540,800	900	57	20.09		2.45	13.72	- 45
Boston	501,107	202	61	20.09	11.27	2.40	10.72	1.47
Baltimore	500,000	98	28	18.36	16,32	7.14	6.12	3.06
Washington . Cincinnati	285,000 325,000	93	36	13.91	3.21	4.28	7.49	3.00
Olamalan d	325,000	95	48	26.25	10.50	3.15	7.35	15.75
Distalance	272,000	77	29	18.06	14.19	5.16	7.16	10.10
Milwaukee	265,000	-	-			_		_
Nashville	87,754	22	6	_	_	١ –	_	l _
Charleston	65,165	28	13	7.14	10.71	-	-	_
Portland	40,000	i —	-	_	_	-	-	-
Worcester	100,410	22	7	9.08	9.08	4.54	4.54	
Fall River	92,233	25	9	24.00	8.00	8.00	4.00	_
Lowell	90,613	22	5	9.08	13.62	4.54	4.54	_
Cambridge	79,607	13	2	13.33	14.70	6.66	=	6.66
Lynn	65,123	17	-	11.76	11.76		11.76	_
Springfield	50,284	16	0	18.75	12.50	18.75	_	_
Lawrence	49,900	13	5	_	17.00	_	_	_
New Bedford .	47,711	10	3	10.00	15.38 50.00	_		_
Holyoke	43,348	10		10.00	00.00			_
Brockton	33,939 33,155	4	0	=	50.00		_	_
Salem Haverhill	32,925	10	Ĭ	30.00	50.00	10.00	20.00	_
Maldon	30,209	iĭ	1 3		18.18			_
Obalasa	29,806	15	4	l –	20.10	_	-	_
Ditah hang	29,313	8	1	-	_	-	_	_
Newton	28,837	6	1		33.33	_	-	_
Gloucester	27,293	_	-	Ξ	_	_	-	_
Taunton	26,954	I —		_	—	_	-	_
Waltham	22,058	8	0	_	33.33	_	-	_
Quincy	19,642	6	4			_	_	_
Pittsfield	18,802	8	2	33.33	66.66		111111111	_
Everett	16,585	3 5	2	00.00	-	_	_	_
Northampton .	16,331	5	1	20.00	-	_	_	_
Newburyport .	14,073	3 6	2	_	16.66	_	-	_
Amesbury	10,920	6	ے ا	_	16.66	_	_	_

Deaths reported 1,642: under five years of age 517; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 263, acute lung diseases 196, consumption 187, diphtheria and croup 134, typhoid fever 47, scarlet fever 34, diarrheal diseases 26, cerebro-spinal meningitis and whooping-cough 5 each, malarial fever 4, small-pox 2, measles 2, erysipelas 1.

From diarrheal diseases Philadelphia 7, Brooklyn and Pittsburgh 4 each, Boston 3, Cincinnati, Providence and Charleston 2 each, Fall River and Medfield 1 each. From cerebro-spinal meningitis Washington 2, Philadelphia, Boston and North Adams 1 each. From whooping-cough Brooklyn 2, Pittsburgh, Fall

River and Pittsfield 1 each. From malarial fever Brooklyn 4. rom measles Pittsburgh and Holyoke 1 each. From small-pox Philadelphia 2.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending November 10th, the death-rate was 16.9. Deaths reported 3,388; acute diseases of the respiratory organs (London) 245, measles 91, diphtheria 77, diarrhea 72, fever 58, whooping-cough 32, scarlet fever 30, small-pox (Birmingham 4, London 1) 5.

The death-rate ranged from 12.7 in Huddersfield to 24.8 in Pres ton; Birmingham 17.8, Bradford 17.7, Croydon 13.0, Gateshead 23.5, Leicester 13.0. Liverpool 21.0, London 15.0, Manchester 18.8, Newcastle-on-Tyne 17.3, Nottingham 18.9, Sheffield 13.9, Sunderland 24.1.

METEOROLOGICAL RECORD.

For the week ending November 17th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Baro- meter	Thermom-Relative				ve ty.	Dire of w	Velocity of wind.				in inches.		
	Daily mean.	Daily mean.	Maximum.	Minimam.	8.00 ₺. Ж.	8.00 P. M.	Daily mean.	8.00 ▲. Ж.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Rainfall in in
S11 M12 T13 W14 T15 F16 S17	30.23 29.86 80.02 29.94	35 81 34 38 42 52 49	39 36 43 41 48 61 55	30 25 24 34 36 42 42	74 76 59 92 52 67 68	53 92 79	65 64 76 86 58 72 68	W. W. S. W. W. S.W. S.W.	W. N.W. S.E. W. S.W. S.W. N.W.	10 14 8 2 10 13 19	11 5 8 15 15 12 9	C. C. O. F. C. O.	C. C. O. F. C. O.	.01

*O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threat ning; N., snow. † Indicates trace of rainfall *** Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 17, 1894, TO NOVEMBER 23, 1894.

The leave of absence granted Captain Adrian S. Polhemus, assistant surgeon, is changed to leave of absence on account of sickness and is further extended to include December 26, 1894, on surgeon's certificate of disability.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NO-VEMBER 94, 1894.

Franklin Rogers, surgeon, ordered to the U. S. Receivingship "Wabash."

E. P. STONE, passed assistant surgeon, detached from the U. . Receiving ship "Wabash" and to the Naval Hospital at

CLEMENT BIDDLE, passed assistant surgeon, detached from the Marine Recruiting Rendezvous, Philadelphia, Pa.

T. W. RICHARDS, assistant surgeon, ordered to Naval Laboratory and Department of Instruction.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE TEN DAYS ENDING NOVEMBER 15, 1894.

AUSTIN, H. W., surgeon. To proceed to Boston, Mass., and assume command of Service. November 10, 1894.

IRWIN, FARFAX, surgeon. To assume charge of Quarantine

Division of the Bureau. November 14, 1894.

McIntosh, W. P., passed assistant surgeon. Granted leave of absence for fourteen days. November 9, 1894.

Young, G. B., passed assistant surgeon. Granted leave of absence for seven days. November 8, 1894.

PROCHAZKA, EMIL, assistant surgeon. Granted leave of absence for thirty days. November 14, 1894.

HARVARD MEDICAL SCHOOL. EVENING LECTURES.

The next lecture will be given on Thursday evening, December 6th, at 8 o'clock, by Prof. Thomas Dwight, LL.D. Subject, "Applied Anatomy of the Head and Neck in Adults and Children." Physicians are cordially invited.

SOCIETY NOTICES.

THE SUFFOLE DISTRICT MEDICAL SOCIETY, SURGICAL SECTION. - The Surgical Section of the Suffolk District Medical Society will hold its regular monthly meeting at 19 Boylston Place, on Wednesday evening, December 5th, at 8 o'clock.

The subject for discussion will be suggested by a paper from Dr. W. N. Bullard entitled, "A Consideration of Some of the Indications for Operation in Head Injuries."

This paper will be followed by the report of "One Case of Fracture of the Skull and Intracranial Hemorrhage," by Drs. F. S. Watson and W. N. Bullard.

"Modern Methods of Operating and the very Careful Study which these Injuries are Attracting," make the consideration of the subject of this evening's meeting an important one and it is hoped that those interested in the modern treatment of head injuries will find it convenient to be present. Several have been juries will find it convenient to be present. Several have been especially invited to contribute to the discussion of this paper.

C. L. SCUDDER, M.D., Secretary.

THE WARREN CLUB. - A regular meeting of the Club will be held at 101 Beacon Street, on Tuesday evening, December 4th, at 8 o'clock.

Dr. Howard Lilienthal, of New York: "Some Surgical Com-

Dr. Howard Linenama, or Advantage of Actinomycosis with Autopsy." Dr. F. B. Mallory: "A Case of Actinomycosis with Autopsy." Dr. Malcolm Storer will show "Specimens from a Case of Extra-Uterine Pregnancy."

WILLIAM G. MILLIAM M. D. President.

JAMES G. MUMFORD, M.D., President. W. E. PAUL, M.D., Secretary.

BOSTON SOCIETY FOR MEDICAL OBSERVATION. — A regular meeting of the Society will be held at 19 Boylston Place on Monday evening. December 3d, at 8 o'clock.
Dr. P. C. Knapp will read a paper entitled: "The Treatment of Chorea with Especial Reference to the Use of Quinine."
Dr. S. J. Mixter: "Intestinal Incision and Drainage in Cases of Acute Peritonitis."

JAMES G. MUMFORD. Secretary.

THE PHILADELPHIA ACADEMY OF SURGERY. SAMUEL D. GROSS PRIZE

The Quinquennial Prize of one thousand dollars under the will of the late Samuel D. Gross, M.D., will be awarded January

The Quinquennial Frize of one thousand dollars under the will of the late Samuel D. Gross, M.D., will be awarded January 1, 1835.

The conditions annexed by the testator are that the prize "Shall be awarded every five years to the writer of the best original essay, not exceeding one hundred and fifty printed pages, octavo, in length, illustrative of some subject in Surgical Pathology or Surgical Practice, founded upon original investigations, the candidates for the prize to be American citizens."

It is expressly stipulated that the successful competitor, who receives the prize, shall publish his essay in book form, and that he shall deposit one copy of the work in the Samuel D. Gross Library of the Philadelphia Academy of Surgery.

The essays, which must be written by a single author in the English language, should be sent to Dr. J. Ewing Mears, 1429 Walnut Street, Philadelphia, before January 1, 1836.

Each essay must be distinguished by a motto, and accompanied by a sealed envelope bearing the same motto, and accompanied the name and address of the writer. No envelope will be opened except that which accompanies the successful essay.

The Committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year.

The Committee reserves the right to make no award if the says submitted are not considered worthy of the prize.

RECENT DEATHS.

FRANK STOWELL WHITTEMORE, M.D., M.M.S.S., died in New York City, November 24, 1894, aged thirty years.

OCTAVIUS STURGES, M.D., F.R.C.P., senior physician to Westminster Hospital, London, died November 3, 1894, aged sixty-one. For many years he had been on the staff of the Hospital for Sick Children on Great Ormond Street. He was the author of well-known works on pneumonia and chores.

BOOKS AND PAMPHLETS RECEIVED.

The Production of Diseases by Sewer Air. Stomatitis Neurotica Chronica. By A. Jacobi, M.D. Reprints. 1894.

The Special Training of the Medical Officer with Brief Notes on Army Medical Schools Abroad and at Home. By Dr. Charles H. Alden. Reprint. 1894.

Directions for Laboratory Work in Bacteriology for the Use of the Medical Classes in the University of Michigan. By Frederick G. Novy, Sc.D., M.D., Junior Professor of Hygiene and Physiological Chemistry. Ann Arbor: George Wahr. 1894.

Lecture.

THE MILITARY MEDICAL OFFICER IN PEACE AND WAR.¹

BY JOHN VAN BENSSELAER HOFF, Major and Surgeon, United States Army.

A PRESIDENT of the United States has said that, "Under our system we will never have a large standing army, and our strength and safety are in a general dissemination of military knowledge among the people." How far the necessity for this applies to the special class of citizens who devote themselves to the practice of medicine, I have heretofore endeavored to show.

The military medical officer is the outcome of long and peculiar experience. He is essential to an efficient army; and it is therefore, I believe, necessary that some knowledge of his duties should be systematically spread among those who will, in the event of war, become the medical officers of our armies.

The National Guard is a valuable training-school for the future medical officer, and with the increasing efficiency of its sanitary department, is daily becoming more so; but were the guards of all the States on the high plane that a few have attained; and were all their medical officers equally enthusiastic, they could not furnish one tithe of those needed in a war of any proportions or duration. It is to the medical schools that we must look for a systematic diffusion of this knowledge.

Scores of combatant officers are detailed as military instructors at the various educational institutions throughout the country, teaching our youth the elements of the art of war. But so far as I know with a single exception, not a medical school is making any systematic effort to teach medical students and medical men the duties of medical officers. And yet how, otherwise, are they to learn them?

Though military sanitation has no abiding place in our medical schools, the medical officer is their handiwork, for the medical department of the army is open to the reputable graduate of any recognized medical college. He himself holds the key which admits him; for the law says, "All vacancies in the grade of assistant-surgeon shall be filled by selection by competitive examination." And all promotions, up to and including the grade of colonel, shall be by seniority. The examination is made by a board of medical officers who decide, as to its result, solely upon the merits of the candidate, the individual is unknown to the board, and any extraneous influence would prove an absolute detriment to him.

The examination successfully passed, the newly-made officer, endowed with all the rights, privileges, and obligations attaching to a first lieutenant of the army, is assigned for instruction to duty in the Army Medical School, Washington, D. C. This school marks one of the very important forward steps, made by our department in recent years; before its organization, the fledgling of Æsculapius, fallen into the lap of Mars must needs have trusted to the blind fortunes of war for his experience. His assignment to duty for instruction with some senior officer of his corps, often determined his future value as an officer; and under any conditions, the instruction to the new appointees was as varied as were the views and numbers of the

 1 A lecture read before the Medical School of Harvard University, October 18, 1894.

instructors. The only outcome of such a plan must necessarily be the absolute diversity of opinion now obtaining in our service regarding military sanitary matters. The school will unify opinion, consolidate the corps, and make it in its singleness of purpose a much more efficient and influential body than it has heretofore been; but its facilities are open to a handful only, and unless mightily extended, this school, valuable as it is, will cut but a small figure in the medico-military education of the great mass of medical men.

The purpose and duties of the sanitary department of an army may be considered under two heads:

(1) Its relation to the military bodies in peace, which is simply a preparation for (2) its true function in war.

In peace its duties are the general care of the sick, military and civilians, attached; the careful observation and regulation of the sanitary surroundings of the soldier, bearing in mind the various conditions of service in climates of widely varying character; the prevention as well as treatment of diseases; the examination of recruits; the discharging of physically unfit men; the management and control of the various classes of hospitals — general, post, field; the supervision and control of all officers and men, both patients and those doing duty in the hospitals; the command, discipline, and interior economy of the hospital corps.

The sick for whom the military medical officer is responsible, come from two classes—the military body proper, consisting of the officers and enlisted men; and the "civilians attached," the latter made up of the families of officers and enlisted men, employés of the various departments at

of the various departments, etc.

From his clientel and the varied circumstances of his practice, it will be observed that he must of necessity get a broad experience in his profession. Ordinarily his practice is so general that opportunity is not afforded him to adopt any of the numerous well-known specialties of our profession, but his whole training is of a character to form the military sanitarian. Every encouragement is given him by his department to keep thoroughly abreast of the times. He is supplied with standard works and standard remedies, and must from time to time render an account of his stewardship, through the instrumentality of searching examinations.

Upon the completion of his course of instruction at the school, the young medical officer is assigned to duty at some one of the numerous posts scattered throughout the country, when his practical experience begins. We will follow him.

Fortunately, his four months in the school has somewhat accustomed him to the wearing of Uncle Sam's livery, and when he dons his uniform to report to the commanding officer of his first station, he does not feel himself the observed of all observers, and all clothes. Such was not the experience of the older officers. Having reported, which is the formal announcement of his presence at the post, he looks about at the various houses from which, within the limitation of his rank, he is entitled to select his future residence, and having found satisfactory quarters, he notifies the quartermaster of his selection.

Among the few emoluments of the army officer is his habitation, be it house or tent, which (the house) he selects according to his rank, mayhap turning out another officer, who in turn selects his junior's quarters, and so it goes on until the whole garrison gives an impression of an animated May-day scene. to put into his house is for himself to decide; the government furnishes nothing, and objects to nothing in reason.

Having reported, in compliance with the phraseology of his order, to the commanding officer, he is directed by him to report to the senior medical officer under whose supervision his work is to be done. Now begins the upbuilding of an experience which is to make or mar the unformed character.

The method of recruiting the Medical Corps of the Army is such as to demand of its officers a high grade of educational attainment; and as only about ten per cent. of the applicants receive commissions, it is reasonable to assume that the corps is recruited from among the best material furnished by the schools. What this material becomes, the Medical Department is itself responsible for.

The post-surgeon in due time assigns the young officer to such work as the situation requires. After a day or two to familiarize himself with his surroundings, he probably receives an order to take charge of

the sick reporting at "surgeon's call."

The Army Regulations, that portentious code of rules, say: "At surgeon's call the sick of the companies will be conducted to the hospital by non-commissioned officers, each non commissioned officer will give to the surgeon the company sick-report book, in which there shall have been previously written the names of the company sick. The surgeon, after examination, will indicate in the book, opposite the names, the men who are to be admitted to hospital, and those who are to be taken to quarters, what duties the latter are capable of, together with any other information in regard to the sick which he may have to communicate to the company commander." The analogue in civil life of "surgeon's call" in the army is the out-patient department of a general hospital. Certain formalities attach to it, but the professional phases of these functions are practically identical. The names of those reporting sick are entered in the hospital day-book; the patient is called by the orderly who attends the medical officer, is examined, and if his condition demands it, is ordered into hospital. If, however, his ailment is trifling, requiring treatment in quarters only, he is given a prescription, which if for medicine, he carries to the dispensary, where it is compounded; or if for a dressing, he presents it to the non-commissioned officer on duty in the operating-room.

Having examined all the cases and entered their disposition in the company sick-books, which he signs, and in the hospital day-book, in which he also notes the diagnoses and any other points of interest, the medical officer then has time to supervise the dressing of any special case that requires it. In the meantime the morning report of sick is being made out by one of the non-commissioned officers and its verification before presentation to the senior medical officer for signature, completes the work to be accomplished at

surgeon's call.

It is of importance that the notes in each case be sufficiently clear so that when the record is transferred to the hospital register all essential facts may be in-

The medical history of a soldier furnishes the evidence upon which his pension is granted; and in every entry the medical officer is required to specifically attached," which, in the language of the regulations,

state whether or not the disease or injury originated in the line of duty. The importance of a careful investigation is apparent, as the lack of it might entail great cost and injustice to the government, or the soldier, usually, however, to the former, for the concrete man before us, appeals to our sympathies more strongly perhaps than does justice to the abstract government, our impersonal selves.

An hour's interval, and the young officer returns to the hospital, and looks over with his senior the numerous cases of trifling ailments among soldiers, who do not require to be excused from duty and consequently do not "go on sick-report" as they call it; and, among the civilians attached, the wives and children who are able to be out. Affections of all kinds prevail among the latter, and in the course of the day the medical officer must practise many specialties. Then follows a visit to the wards, where the cases are carefully examined and prescribed for, and then to the operatingroom where such operations and dressings are done as may be necessary.

The morning professional work at the hospital having been accomplished, the senior medical officer starts upon his rounds among the civilians attached who are too ill to present themselves to him; and the young officer awaits his return to the hospital. Being of an inquiring turn of mind, he questions the hospital steward as to the various reports, etc., required of a medical officer; as to his so-called extra professional or official duties, their character, etc.; and the fact dawns upon him that he has come into a position the duties of which he knows practically nothing of.

In order to a proper understanding of these duties it is necessary to observe that the medical officer is the servant of the government which he represents, and that his relation to his patients in the military service,

is as such a representative.

It must be remembered that in consideration of a certain remuneration the soldier devotes his life to his country. This remuneration includes, among other things, an annuity for life, amounting to three-fourths of his pay, if an officer, or a pension if an enlisted man, should be be permanently disabled, and life insurance (pension) for his family should he die, providing that his disability or death is incident to the service. interests of the government and the individual are for the most part coincident, as health and consequent efficiency are of the highest advantage to both, and the end to be sought; but it may readily be perceived that sometimes the individual is neglectful of his health, he indulges in excesses of all kinds, and breaks down physically as the result thereof. Such a break-down not being incident to service, the subject is not entitled to retired pay or pension. Here it is that the medical officer steps in to protect the interests of the govern-

From the foregoing it will be seen that there cannot exist between this officer and his military patients the same relationship which obtains between a physician in civil practice and his patients; for in the latter case the physician is the patient's agent, and their relationship is covered by the seal of professional secrecy, while in the former the medical officer is an agent of the government, and is required to report to the War Department all the physical aches and ills from which his patients suffer.

Towards the other class of patients, "the civilians

"He will attend . . . when practicable," the medical officer's relationship is identical with that existing between the civil practitioner and his patient; for the government not being pecuniarily interested in this class, demands no detailed report of its ailments.

It is to these reports that the young officer now turns his attention, and knowing little about them, he is soon lost in their mazes, and cries out at the endless "red tape." But "red tape," which is so fashionable to decry, is the synonym of order, regularity, system and efficiency; without it a small business may possibly be carried along fairly well, but no large business can be, and certainly no great institution in our country or any other, whose ramifications are so extensive as are those of the army, reaching as they must in almost every direction, can be successfully carried on with much less attention to detail.

The daily morning report of sick heretofore referred to, is a numerical report by organization of those excused from any part or all of their duty, and the place of treatment whether in quarters or in hospital. It includes those who remained sick, carried over from the previous day's report, those who were taken sick in the mean time, and the disposition of those who were dropped by return to duty, transfer to another hospital, discharge or death. This report is signed by the senior medical officer immediately on duty with any command; it is for the immediate commander, and is taken to the adjutant's office, usually by a non-commissioned officer of the hospital corps, before "guard-mount."

At the same time he takes the morning report of the hospital corps, which is a numerical statement of the detachment, giving the number of men present for duty, sick, absent, on detached service, on furlough, etc. This report is also signed by the same officer, and is submitted each day. With these reports are sent all official communications that concern post head-quarters or are required to pass through military channels.

The medical officer has two channels of communication with his superiors, one through which he addresses the purely military functionaries upon matters of a strictly military nature, and this is called the military channel. It begins with the adjutant of the command, to which the addressing officer is attached, passes on to the adjutant-general of the superior headquarters (usually one), finally reaches the adjutantgeneral of the army, and ends with the commanding general or with the Secretary of War. When a communication is acted upon, it is returned through the same channel to the officer who originated it. The other channel is known as the corps channel, and is used only for communications which have no bearing upon any thing or body, outside the department. They are sent to the medical director, who forwards them directly to the surgeon-general, who, if necessary, returns them to the same officer.

The most important paper made out by a medical officer is the monthly report of sick and wounded of the command to which he is attached. This is an exact copy of the hospital register of all cases that have not been disposed of in previous like reports, and gives the hospital number, the name, rank, organization, age, length of service, cause of admission, diagnosis, whether or not the disease or injury originated in the line of duty, sequelæ, disposition (return to duty, remaining under treatment, transfer, discharge, death, etc.), and finally the date of disposition. It

also gives the names of the organizations composing the command, and their strength, a numerical statement of the number of cases remaining under treatment at date of last report, of those taken sick during the month, returned to duty and remaining, the total number of days of treatment in hospital and in quarters. It is also a record of diseases among the civil population attached to the command — however, only as to the number of cases, not as to the names of the individual patients. A brief sanitary memorandum accompanies and completes the report. It is sent direct to the surgeon-general, and a copy of it to the medical director, before the 5th of each month.

Other monthly reports sent to the surgeon-general through the medical director are these: the personal report of the medical officer, giving in brief a history of his duty during the month—of leaves of absence and the authority therefor; of sickness, etc.—which report should be brief but full, as to a large extent an officer's record is compiled from it; sanitary report (through military channels); report of recruits; return of hospital fund; and return of the hospital corps.

The quarterly reports required are a return to the quartermaster-general of clothing and equipage and of quartermaster stores, and a return to the chief of ordnance of ordnance stores.

The only annual report rendered by a medical officer is the return of medical property and medicines, to the surgeon-general; this is also rendered when an officer is relieved from responsibility for medical property.

In addition to the foregoing, numerous special reports upon various subjects are constantly being made.

The permanent records or books pertaining to the medical department of a post are the medical history of the post, meteorological register (at certain posts only), register of patients, register of the detachment hospital corps, statement of the hospital fund, record of examination of recruits, record of deaths and interments, morning report of the detachment hospital corps, transfer (of patients) book, clothing-book, descriptive-book, and copies of requisitions, returns and other reports, and of all orders and letters relating to the department.

In addition to the foregoing, experience has taught the necessity for the following; a blotter or day-book, in which are entered the names of all patients treated each day, their treatment and a brief history of the case; a register of patients' effects, in which is entered a list of all property received from a patient when he enters the hospital; daily bill-of-fare record; property-book, containing a list and the location of all property pertaining to the department; a detachment hospital corps order-book; a roster of duty assignments hospital corps and a record of instruction; and a roster of company bearers.

(To be continued.)

Tubercle Bacilli in Butter. — A Swiss physician introduced butter made from the milk of a tuberculous cow, and containing tubercle bacilli, into the abdominal cavities of guinea-pigs. The guinea-pigs died of tuberculosis. He then bought butter from various markets, and injected five to ten centimetres of it into the abdomens of guinea-pigs. Two out of twenty specimens of butter were found to contain virulent tubercle bacilli.

Original Articles.

THE DIAGNOSIS AND SURGICAL TREATMENT OF CASES OF EMBOLISM AND THROMBOSIS OF THE MESENTERIC BLOOD-VESSELS, WITH REPORTS OF CASES.¹

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In the Boston Medical and Surgical Journal of April 26, 1894, Prof. W. T. Councilman reported three cases of occlusion of the superior mesenteric artery.

Two months later Dr. J.W. Elliot mentioned to me a case on which he had operated for intestinal obstruction, in which the patient died, and the autopsy showed

thrombosis of the mesenteric artery.

Two days later a woman fifty years of age entered my service at the Boston City Hospital, with the following history: For several years she had had attacks of dyspnea and palpitation. One week previous she was seized with violent colicky pains in the abdomen, which were not localized. This pain persisted intermittently for five days, then became localized in the right iliac fossa and diminished in severity. There had been no passage of feces or flatus since the beginning of the attack. Vomiting began two days before entrance, and has persisted ever since. There had been gradually increasing abdominal distention from the first.

When received at the hospital, the patient was conscious. Her face and extremities were cold, cyanotic, and covered with cold sweat. The abdomen was greatly distended and universally tympanitic. The pulse was 120°, weak, thready and irregular. Temperature subnormal.

Operation.—A median incision was made below the umbilicus, three inches long, and subsequently extended to six inches. A portion of the enormously distended ascending colon immediately protruded through the wound. The whole of the ascending colon was glued lightly to the parietal peritoneum by recent adhesions, which were easily separated by the hand. There was about a pint of dark bloody serum free in the peritoneal cavity. The ascending colon was deeply congested; and in places beneath its serous surface there were hemorrhagic extravasations, from a point two inches above the cecum to its junction with the transverse colon. Scattered over the same area were about a dozen spots of beginning gangrene, varying in size from a quarter of a dollar to a ten-cent A few gangrenous spots were situated in the mesentery at its junction with the bowel. The cecum and vermiform appendix presented a perfectly normal appearance. A portion of the ascending colon close to the cecum was drawn out of the wound, and a small incision was made into it, through which a great quantity of the intestinal contents (which was fluid and of normal color) was evacuated, and the gut was rapidly flushed with hot water.

The collapsed colon was then drawn through the wound and examined throughout its entire length. The most careful search failed to show any constriction, or other of the usual causes for infestinal obstruction or gangrene; and I then concluded that I had to do with a case of occlusion of the mesenteric vessels. On carefully examining the mesentery sup-

¹ Read before the Surgical Section of the Suffolk District Medical Society, November 7, 1894.

plying the ascending colon, I found near its base, in the middle portion, a thickened area in which there could be distinctly felt between the thumb and finger, hard, round, elongated masses, some of which were about the size of a slate-pencil; which I believed to be branches of the superior mesenteric artery or vein occluded by thrombi. The lines of demarcation at either end of the diseased part of the bowel were well defined, and I wished to excise the part of the gut between them; but at this point the patient's condition became so alarming that I hastily made an artificial anus and abandoned the thought of any further surgical interference. The patient lived for five days, on the third day there was discharge of feces by the rectum; and on that and the following day the patient seemed to rally somewhat in strength. On the fifth day the temperature, which had been subnormal throughout, suddenly rose, and the patient died. An autopsy was not permitted. There was no vomiting or pain after the operation.

Although not positively demonstrated by post-mortem examination, I think it may be fairly assumed that this was a case of occlusion of the mesenteric vessels with the resulting intestinal lesions.

A few days after this case another one came to Dr. J. W. Elliot, in which he not only recognized the condition, but also saved the patient's life by what, I think, may be properly called a brilliant surgical achievement, thereby marking, so far as I can learn, the first successful result of surgical intervention in this disease. Previous to my case, one occurred in the hands of my colleague, Dr. Abner Post, at the Boston City Hospital, and within the last few days, Dr. D. W. Cheever has had still another.

An examination of the records of the Boston City Hospital for the past ten years, for which I am indebted to the kindness of Drs. Stokes and Dennett, furnishes three more examples of thrombosis of the mesenteric artery in which the lesion was clearly demonstrated, and three others in which it was not demonstrated, but was probably overlooked, inasmuch as the intestinal conditions which have been seen in all the proved cases were present in these last ones also, and no other cause was discovered to which they could be referred.

We have, then, a series of fourteen cases, in ten of which the condition was demonstrated accurately, occurring here in Boston within the past eight years (eight of them observed within the past year), through which can be traced an interesting progress from the record of the pathological anatomy in the autopsy-room to the clinical recognition of the disease at the time of operation, and finally to the saving of a patient's life in the surgical amphitheatre by the remarkable operation of Elliot.

The first satisfactory description that I have found of the pathological anatomy of this condition is that of Virchow in his Gesamt. Abhandlungen. He published, I think in 1858 or 1859, an account of the post-mortem appearances in three such cases. In the hospital records and literature accessible to me, I have found reports of 52 cases, occurring between that time and the present, of occlusion of the mesenteric arteries or veins by emboli or thrombi, in all of which there are accurate records of the pathological conditions; to 27 of this number are attached clinical histories sufficiently satisfactory to permit of drawing inferences from them. These latter I have analyzed with

only two objects in view: First, as to the possibility of making the diagnosis; and second, as to the chance of saving life by surgical operation. In order to assist in following this analysis, the cases are here presented in the following order: (1) Cases of embolism or thrombosis of the superior mesenteric artery, with clinical histories; (2) Of the mesenteric veins, with clinical histories; in all, 27 cases.

CASES OF THROMBOSIS, OR EMBOLISM, OF THE SUPE-RIOR MESENTERIC ARTERY.

CASE I. Cohn.² Woman, aged forty-five years. The only intestinal symptom mentioned is diarrhea. Pneumonia and pleurisy supervened.

Autopsy. — The colic branch of the superior mesenteric artery was entirely occluded by an embolus. Infarction of the transverse colon. Mitral disease. Old coagulum in the left ventricle. Pleurisy and pneumonia of the left side.

CASE II. Cohn.² Man, aged twenty-eight years. Diarrhea is the only intestinal symptom mentioned.

Patient had syphilis and Bright's disease.

Autopsy. - Branches of the superior mesenteric artery supplying the lower portion of the ileum firmly plugged by adherent coagula. Infarction of the last foot of the ileum. Atheroma of the aorta. Heart normal.

Oppolzer.8 Male, aged fifty years. CASE III. Suddenly seized with violent colicky abdominal pain, not localized. This was followed shortly by vomiting and a profuse bloody diarrhea. Old cardiac disease was present.

Autopsy. - Main trunk of the superior mesenteric artery totally occluded by an embolus two inches long. Infarction of the bowel from the middle of the duodenum to the middle of the transverse colon. The mucous membrane of the intestine swollen and softened. Stenosis of the mitral valve, and coagulum in the left

Kussmaul.4 Male, aged twenty-six CASE IV. years. Was suddenly attacked, in the course of cardiac disease and empyema, with profuse bloody diarrhea. Subnormal temperature followed, and death thirty-six hours later.

Autopsy. - Branches of the superior mesenteric artery supplying the jejunum totally occluded by hard adherent thrombi extending into the peripheral arteries. Infarction of the lower part of the small intes-The mucous membrane of its lower portion deeply injected and showing small necrotic areas. Hemorrhagic peritonitis, hemorrhagic extravasations into the mesentery. Peri-myoendocarditis, empyema, Bright's disease. Infarctions of both kidneys and spleen.

Case V. Pieper. Male, aged thirty-eight years. Was suddenly attacked with violent colicky abdominal pain, not localized, preceded a few hours before by profuse vomiting and bloody diarrhea. These symptoms appeared on the seventeenth day of an acute rheumatism, on the eleventh day of which endocarditis developed. One day later the patient died.

Autopsy. — The main trunk of the superior mesenteric artery was totally occluded by a firm adherent coagulum. Infarction of the whole small intestine, and of the large intestine as far as the transverse

Klinik, der Gefäsekrankheiten, p. 548.
 Alig, Wien. Med. Zig., 77-88, 96-103, 1862.
 Würz. Med. Zeitsch., v. v, 210-220, 1864.
 All. Med. Cent. Zig., v. xxxiv, 493-496, 1865.

Intestinal contents bloody. General peritocolon. nitis. Infarction of the spleen.

CASE VI. Moos. Male, aged nineteen years. On the eighteenth day of an acute rheumatism was suddenly attacked by a profuse bloody diarrhea, followed shortly by violent colicky pains (not localized), and by gradually increasing abdominal distention. Temperature subnormal. There was evidence of widespread embolism in other parts of the body at the same time. The patient recovered at the end of eight weeks.

CASE VII. Zenker. Male, aged thirty-nine years. Amputation of the right leg for injury July 19, 1869. Died November 17th. Septicemia followed the amputation. During the last three days there was occasional vomiting, but no other abdominal symptom.

Autopsy. — Infarction of a portion of the small intestine. The branch of the superior mesenteric artery supplying this area was totally occluded by a hard, adherent embolus. Thrombosis of both femoral veins. Septic abscesses in left arm and right thigh.

CASE VIII. Baumler.7 Male, aged sixty-one years. Had chronic heart and renal disease. Five days before death began to vomit. Three days before death abdominal distention and subnormal temperature.

Autopsy. — Three and one-half centimetres from its origin the superior mesenteric artery was totally occluded by a coagulum fourteen millimetres long; from it a prolongation extended three millimetres into one of the branches of the vessel. There were two branches given off from the artery between its origin

and the embolus, which were free from emboli.

Case IX. Concato.8 The patient was suddenly attacked three days before death with violent colicky pain and tenderness in the epigastrium, which persisted until death. There were no other abdominal symptoms except slight distention. Temperature subnor-

Autopsy. - Several of the branches of the superior mesenteric artery were totally occluded by thrombi. Infarction of the small intestine from the upper part of the jejunum downwards. The contents of the bowel were bloody. The peritoneal cavity contained a considerable quantity of foul, dark fluid. Atheroma of the abdominal aorta, with several thrombi on its

Putnam, Mary.9 Woman, aged thirtyfive years. Was suddenly attacked with copious diarrhea; the stools were tarry. A few days later she had violent colicky abdominal pains, not localized, followed two hours later by vomiting, and two days later by abdominal distention. Death occurred three days after the appearance of pain.

Autopsy. — Gangrene of the last two feet of the ileum; the mesentery of this portion of the bowel was thickened, and contained extravasations of blood. Numerous hard bead-like bodies were felt in the mesentery near its intestinal attachment. The bloodvessels were not, however, thoroughly examined.

Howse.10 Woman, aged forty-eight CASE XI. years. There were two attacks of abdominal pain some months before the present illness. The latter began with severe pain in the right hypochondrium, but

<sup>Virehow's Arch., v. xli, p. 62.
Deutsch Arch. für klin. Med., v. xvi, p. 527, 1875.
Rivista Clinica del, 1866.
New York Medical Record, vol. vii, p. 208.
Transactions Pathological Society, London, vol. xxix, p. 101, 1072.</sup>

it lasted only a short time. Vomiting followed soon after, and also diarrhea, which was profuse but not bloody, and continued till death, three weeks later. Abdominal distention was present throughout the illness. The temperature ranged from 99° to 102° F. There was gangrene of the left foot.

Autopsy. — The main trunk of the superior mesenteric artery was totally occluded by a firm thrombus which extended into the aorta downward. The aorta above was healthy. Extensive ulcerative processes of the mucous membrane of the lower part of small intestine and first part of the ascending colon. Peyer's patches were not implicated in this process. were two fistulous communications between separate parts of the intestines, and they were not of recent formation; one was between a loop of small intestine and the ascending colon, the other between small intestine and descending colon. Some of the branches of the superior mesenteric artery were occluded to their terminations with thrombi.

CASE XII. Aronshon. 11 Male, aged forty-five years. Was seized with sudden violent pain in the epigastrium; this ceased in two days. Eight days later he had a similar attack accompanied by dyspnea and cyanosis; these symptoms lasted four days. There was no vomiting or diarrhea. The abdomen was Temperature 100°. slightly distended. cardiac disease and edema of the lungs. Death on the twelfth day.

Autopsy. — Superior mesenteric artery, and its branches as far as the intestine, were occluded by thrombi. Embolism of one of the arteries of the brain. Infarction of jejunum and ileum. The pelvis contained a considerable quantity of bloody fluid. Edema of lungs. Hypertrophy of left and dilatation of right side of the heart.

CASE XIII. McCarthy.12 The patient was attacked suddenly with violent pain in the right hypochondrium; the pain persisted for six days. Vomiting, obstipation and abdominal distention were present throughout the illness. Laparotomy was performed for the relief of intestinal obstruction, which was secured by making an artificial anus. The patient died shortly afterward.

Autopsy. — The main trunk of the superior mesenteric artery was occluded by an embolus originating in a thrombus in an atheromatous aorta.

CASE XIV. Hahn.18 Male, aged fifty-six years. Suddenly attacked with vomiting, followed by severe was no diarrhea, constipation or abdominal distention. The abdominal walls were soft and natural. Cardiac and renal disease were present. Death in one day.

Autopsy showed embolism of the superior mesenteric artery.

CASE XV.14 Male, aged seventy-eight years. Chronic cardiac and renal disease. Died without having any abdominal symptoms whatever. Temperature normal. The patient was under observation for three days. He was brought to the hospital unconscious, after having fallen in the street. He regained consciousness a few hours later.

Autopsy. - Totally occluding thrombus of the principal branches of the superior mesenteric artery. Hemorrhagic infarction of the small intestine. Fifty centi-

metres of ileum above the ileo-cecal valve was dark red in color, covered with patches of shreddy mem-The intestinal walls much thickened. Mucosa brane. hemorrhagic, and showing small spots of superficial Hemorrhagic infarction in right kidney, necrosis. hydronephrosis of left kidney, chronic interstitial nephritis. Chronic lepto-meningitis, endarteritis of cerebral vessels. Acute endocarditis. Chronic emphysema of lungs.

CASE XVI.18 Male, aged sixty-one years. Twelve days after the beginning of senile gangrene of the feet the patient was suddenly attacked with violent colicky abdominal pains, not localized. The pain continued until death. One day later there were no other abdominal symptoms. Temperature subnormal.

Autopsy. — Embolus of the superior mesenteric artery. Infarction of the whole of the small intestine, most marked in the upper part of the jejunum. Thrombus in mesenteric artery began four centimetres from the aorta and extended throughout the branches almost to the intestines. General peritonitis. Thrombi in the aorta. Embolism of the femoral artery. Old and recent infarction of kidneys

The patient had short Case XVII. Grawitz.16 periods of unconsciousness and vomiting.

Autopsy showed embolism of the superior mesenteric

CASE XVIII. Kaufman.17 Violent colicky abdominal pains, not localized.

Autopsy showed embolism of the superior mesenteric artery. Atheromatous aorta. Endocarditis. Thrombi in the heart.

CASE XVIX. Moyers.18 A patient with cardisc disease was suddenly seized with violent colicky abdominal pains, hematemesis and diarrhea.

Autopsy showed embolism of the superior mesenteric

CASE XX. Osler. 19 Woman, aged fifty-five years. Suddenly attacked with violent abdominal pain, not localized. Vomiting soon followed, and persisted till death, finally becoming fecal. Tympanites was present. Death one week after onset of attack.

Autopsy. — Thrombosis of the superior mesenteric artery, totally occluding its orifice. Hemorrhagic infarction of jejunum and ileum.

CASE XXI. Osler.19 Woman, aged seventy-five years. Suddenly attacked with severe abdominal pain, not localized. Frequent vomiting and diarrhea; the latter lasted but a short time, and was followed by obstipation and abdominal distention.

Autopsy. — Embolism of the superior mesenteric artery. Infarction of the small intestine, involving most of the ileum and jejunum. Recent warty vegetations on the heart.

Osler.19 CASE XXII. Male, aged forty years. Suddenly attacked with violent abdominal pains, not localized. Vomiting and diarrhea soon followed; the stools were tinged with blood. Tympanites appeared later. Death at the end of one week.

Autopsy. — Superior mesenteric artery was blocked for half an inch of its main trunk by a fibrinous clot, which extended into the artery from an aneurism of the aorta, from the sac of which the superior mesenteric artery had its origin.

¹¹ Gaz. Des. Hôp., September 1, 1868, No. 102, p. 406.
12 London Lancet, March 22, 1890.
13 Dissertation, Munich, 1869.
14 Boston City Hospital Records (not published), June 17, 1887.

Ibid., vol. xxv, p. 222 (not published).
 Virchow's Arch , Bd. 110, p. 434.
 Ibid., Bd. 116, p. 353.
 Glasgow Medical Journal, 1880, vol. xiv, p. 484.
 Practice of Medicine, 1893, p. 404.

CASE XXIII. Councilman.20 A woman, eightyfive years old, was attacked with moderate abdominal pain, which after a few hours became intense, and was localized in the right iliac fossa. This pain persisted throughout the illness. Vomiting began on the fourth day and continued until death, finally becoming fecal. There was complete intestinal obstruction throughout the illness. The abdomen was distended after the second day. Subnormal temperature until the eighth day; it then rose to 101.5°. Fatty degeneration of the heart, and lobular pneumonia were present. Death on the twelfth day.

Autopsy — Thrombosis of the superior mesenteric artery, extending from a thrombus of the aorta which arose from a rough calcified plate on the surface of the aorta near the origin of the superior mesenteric artery. The extension of the thrombus into the latter vessel was short, and did not absolutely occlude its lumen; the rest of the vessel and its branches were free. The intestines were distended and but moderately congested. There was no intestinal infarction.

CASE XXIV. Councilman.20 A man, sixty-one years old, with senile gangrene of the feet, had general, slowly increasing abdominal pain two days before

Autopsy.— The superior mesenteric artery was occluded by an embolus arising from a thrombus formed on a calcified plate in the atheromatous aorta, near the origin of the superior mesenteric artery. Hemorrhagic infarction of the entire small intestine; necrotic areas on its mucous membrane. Thrombosis of the femoral arteries, and embolus and infarction of the kidneys.

Councilman.20 A man, sixty-two CASE XXV. years old, was suddenly attacked with violent general abdominal pain and tenderness which increased until death. There was no vomiting. Diarrhea for eight Temperature was slightly eledays before death. vated. Cardiac symptoms had been present for eight months previous. The patient died on the eighth day after the appearance of the abdominal pain.

Autopsy. Total occlusion of the superior mesenteric artery, at its origin, by a thrombus, which probably originated in an atheromatous aorta — infarction of small intestine — cardiac hypertrophy and insuffi-

ciency of the aortic valves.

CASE XXVI. Munro. 11 A man, fifty-one years old, felt pain in the lower abdomen after lifting a heavy weight, and soon afterward passed blood per rectum. This was succeeded by colicky pain in the abdomen. Constipation followed for one week. Pain was the first symptom, and was referred to the region of the transverse colon. Vomiting was present during most of the illness, and finally became fecal. A large, hard mass could be felt in the left iliac region. Temperature subnormal. Laparotomy was performed at the end of three weeks. The hard mass in the left iliac region was seen to be thickened, mesentery contained hemorrhagic extravasations. In the description of the operation it is not clear what was done, if anything, beyond opening the abdomen.

Autopsy. — Embolism of the inferior and superior mesenteric arteries. Infarction of the small intestine and its mesentery, also of the descending colon and

sigmoid flexure.

Including the author's, the whole number of cases is

27. A study of these cases gives the following re-

Pain occurred as the first symptom, or coincident with vomiting or diarrhea, in 18 cases. In all but three of these it was violent, paroxysmal, colicky, abdominal pain, not localized definitely. In two cases it was localized in the epigastrium, and in one in the right iliac fossa. In most of the cases the pain continued throughout the illness. Pain was absent in four cases, and not noted in five cases.

Diarrhea occurred as an early symptom in 14 cases. It was bloody in seven of these. There was no diarrhea or other disturbance of the bowels in six cases. Obstipation was present in five cases. No observation is recorded in two cases.

Vomiting occurred as the first symptom, or as closely following the abdominal pain, in 14 cases; in 2 of these it was bloody, and in 3 it was fecal. In most of these cases it was persistent, and continued during most of the illness. There was no vomiting in 6 cases, and there is no record about it in 7.

Abdominal Distention occurred in 12 cases, appearing a day or two after the beginning of the illness and gradually increasing. There was no distention in 4 cases, and there is no record of it in 11.

Temperature was subnormal in 11 cases, elevated in 4, not recorded in 13.

Preceding or Coincident Diseases in 16 cases. In 9 of these cardiac and (or) renal disease was noted during life; pneumonia and pleurisy in 2; gangrene (senile) of feet in 3; pyemia in 1; acute rheumatism in 1. There was evidence of embolism elsewhere in but 5 cases during life.

Age. - The cases occurred at the following ages:

Between	10 a	nd 2	Ο.		•		1 case
Between	20 a	nd 3	υ.				2 cases
Between	30 a	nd 4	ο.				3 савев
Between	40 a	nd 5	Ο.				4 cases
Between	50 a	nd 6	0.				5 cas es
Between	60 a	nd 7	D.				4 cases
Between				·			2 cases
Over 80							1 case

Sex. — There were 14 males and 7 females. cases not noted.

Autopsies show that the source of the embolus or thrombus, to have been the heart or atheromatous aorta in 15 cases, an aneurism of the aorta in 1. Undetermined or not noted in 9. There was no

autopsy in 2.

Total Occlusion of the main trunk of the superior mesenteric artery occurred in 8 cases. It is interesting to note the symptoms in connection with these particular cases. In the first case there was hemorrhagic infarction of almost all the small intestine. The patient, however, had no abdominal symptoms whatever. Duration of the illness was three days. In the second case there was infarction of the jejunum Slight tympanites and epigastric pain and the ileum. were the only abdominal symptoms. In the third case there were fistulous communications between the intestines in two places, which were not of recent formation, and an ulcerative process of the mucous membrane of a part of the small intestine. The abdominal symptoms in this case were pain, vomiting, diarrhea (but not bloody), and abdominal distention. In the fourth case there was infarction of almost all the small intestine. The attack came on gradually, vomiting and abdominal distention were the only symptoms. In the fifth case there was infarction of all the small

Boston Medical and Surgical Journal, April 26, 1894.
 Lancet, January, 1894, p. 148.

intestine and of the large intestine as far as the transverse colon. General peritonitis. The abdominal symptoms were violent colicky pains, vomiting and bloody diarrhea. In the sixth case there was infarction of the small and part of the large intestine. The abdominal symptoms were violent pain, vomiting and profuse bloody diarrhea. In the seventh case there was infarction of all the small intestine and general peritonitis. The only abdominal symptom was acute, colicky pain. In the eighth case there was hemorrhagic infarction of the whole of the small intestine. Abdominal pain and diarrhea were the only symptoms.

It will be noticed that in one case there was entire absence of abdominal symptoms, and that in two others they were very slight, but that in all but one of these cases of total occlusion of the main trunk there was infarction of a very great part of the intestines; whereas in another case in which only the branches of the vessels supplying a part of the ileum and jejunum was plugged, and in which but a short distance of the small intestine was involved in an infarction, there were nevertheless sudden violent abdominal pains and profuse bloody diarrhea. Other examples of the same combination as in the last case are to be found; in other words, the plugging by an embolus of one of the smaller branches of the artery with a comparatively slight intestinal lesion as a consequence may produce as severe and as many (or more) abdominal symptoms as when the main trunk of the vessel is occluded, and may lead to a more speedily fatal termination. So that it is impossible to discriminate clinically as to the extent, or even probable location, of the occluding body, even if it be possible to make a fairly accurate diagnosis as to the nature of the trouble itself.

Before speaking further of diagnosis, I wish to add the reports of three cases of

THROMBOSIS OF THE SUPERIOR MESENTERIC VEIN.

CASE I.³² Female, age 34. Confined one month previous to attack. Ten days before, had phlegmasia of the left leg, which subsided in a week; then the right leg was similarly affected. Nine days before attack, she had a troublesome diarrhea. She was attacked, one month after confinement, with violent pain in abdomen — paroxysmal, colicky, not localized; vomited viscid, blood-stained fluid in small quantities; collapse; was conscious; six hours later pain almost ceased, and patient improved; abdomen soft and natural, no tenderness anywhere, no tympanites, nothing to be felt; a few hours later pain returned and she died — twelve hours after attack began.

Autopsy. — The jejunum was of a dark-purple color. The congestion extended a short distance into the mesentery; the congested area was sharply limited above and below, the rest of the digestive tract being healthy. There was no distention of any part of the bowel. The heart, aorta and mesenteric arteries were normal. The branches of the mesenteric vein coming from the affected portion of the intestine, and for a short distance beyond either end of it, were occupied by firmly adherent, hard thrombi, extending throughout the entire course of the vessels. The thrombi could be felt as hard masses lying in the mesentery to within an inch or two of the bowel. The femoral veins were plugged by recent thrombi.

CASE II.22 A young girl, who was in the hospital

Fagge: Trans. Path. Soc., London, 1876, vol. xxvii, p. 124.
 McWeeney: Lancet, December 23, 1893.

for an abscess of the neck, developed erysipelas. A few days later she was seized with violent epigastric pain, and died in a few bours.

Autopsy. — Thrombosis of the superior mesenteric vein and its tributaries. Hemorrhagic infarction of the intestine throughout the area of the vein's distribution.

CASE III.24 A woman, aged fifty. For a year she had had renal and cardiac symptoms: Edema of the feet and of the face, vomiting, dyspnea, palpitation and frequent urination. The patient entered the hospital December 11, 1886. Two weeks previous the abdomen became distended and has increased steadily in size since. Examination showed cardiac hypertrophy and tricuspid regurgitation. contained granular and hyaline casts and one-eighth per cent. of albumin. There was a well-marked anasarca. There had been marked constipation for two or three weeks; the bowels could be moved by cathartics with difficulty. Two days after admission, four quarts of ascitic fluid were withdrawn by trocar. Three days later, Cheyne-Stokes respiration and constant vomiting of dark-brown fluid took place. Pulse Patient became comatose two days later, and died on the eighth day after admission, and in an uremic convulsion.

Autopsy.²⁸ — Hypertrophy and dilatation of heart. Venous engorgement of the lungs, liver and spleen. Thrombosis of portal vein and its branches. Ascites. Hemorrhagic infarction and necrosis of jejunum; 50 centimetres of the jejunum was of a dark-red color and covered with a recent fibrinous false membrane. The mucous membrane was greatly thickened, very dark in color, and showed occasional necrotic areas. The mesentery was much thickened. A firm thrombus occupied the junction of the superior mesenteric and splenic veins, nearly occluding their lumen, and extending into them. The peritoneal cavity contained about one litre of clear fluid.

Of these three cases, two were of more violent character and of more rapid course than any of those in which the artery was involved.

There are two recorded cases of embolism of the inferior mesenteric artery; but I do not find that they present any symptoms which serve to differentiate them from the others, although it has been stated that this class may be distinguished from those of the superior mesenteric vessels by the presence of fresh blood in the dejections and by the localization of pain in the lower part of the abdomen. The number of observations of embolism of the inferior vessel seems too few to allow this inference.

With regard to the diagnosis there are certain symptoms which when associated, are fairly, though not positively, characteristic. They seem to me to be, in the order of their importance, as follows: (1) Colicky, very intense, not definitely localized, abdominal pain. (2) Bloody diarrhea. (3) Subnormal temperature. Vomiting if present (and next to pain it is the most frequent symptom) strengthens the diagnosis, as do also abdominal distention and marked prostration; but the first two or first three symptoms, when occurring in combination, are the only ones that can be called in any sense characteristic. Pain is the first symptom more often than any one other, and its intense character is dwelt on by several authors.

²⁴ Boston City Hospital Records (not published), vol. ccl, p. 228.
²⁵ Medical Records, Boston City Hospital; vol. ix, p. 188, vol. ccl, p. 226 (not published).

Gerhardt and Kussmaul speak of the evidence of embolism elsewhere in the body as one of the symptoms essential to making the diagnosis. When present it is, of course, of great value, but as already pointed out, it occurred in but few of the cases enumerated here (in eight). The coexistence of cardiac disease and atheromatous arteries is also affirmatory in connection with the important symptoms mentioned. remains a considerable number of cases in which there are no well-marked abdominal symptoms; in these it is impossible to make a diagnosis. In about onequarter of the cases the symptoms are seen to be sufficiently characteristic to warrant the diagnosis. none could the extent of the intestinal lesion or the situation of the thrombosis or embolus have been determined without surgical exploration of the abdomen.

SURGICAL OPERATION.

(1) In about one sixth of the cases the autopsy showed that the intestinal lesion was sufficiently limited and well defined to allow of a successful resection of that part of the bowel.

(2) In the majority of cases there are coexisting diseases, most frequently cardiac or renal, or atheromatous arteries, and most of the patients are beyond

middle life.

(3) There is, on the other hand, a small minority of cases of individuals below middle life, in whom the source of the embolus, or cause for thrombosis, is obscure or undiscoverable, in whom no serious disease of other organs can be detected.

(4) Practically, all patients die when left to themselves or under any form of medical treatment.

From the above considerations it may be concluded that laparatomy is indicated in all cases in which the symptoms suggest the nature of the disease, and in which the patient is not too greatly prostrated or has not some other fatal disease. There will probably occur a few in which the local and general conditions of Where a not the patients are favorable to success. too extensive portion of the gut is involved, and if it be possible to do so, resection of the diseased part should be practised; otherwise an artificial anus should be made, and if the patient survives, the cut ends of That this is the bowel may be united subsequently. actually possible, is shown in the remarkable case of Elliot's which he is to report to-night, in which he successfully resected about four feet of the small intes-

In conclusion, and to show the possibility of survival after total obliteration of the main trunks of the mesenteric arteries, the following case is appended:

John Chiene.26 Female, age sixty-five, a dissecting-room subject. The vessels were injected from the The branches of the celiac and mesenteric femoral. arteries were found to be filled with the injection, but their main trunks were totally occluded as far as their first branches by an old embolic process which evidently dated back for a considerable period. There was an aneurism of the lower abdominal aorta, from the sac of which the lower mesenteric artery sprang. celiac axis was converted into a hard fibrous cord for its first half inch; beyond this point the branches were free. Both mesenteric arteries were obliterated at their origins, but their branches were filled with the injection through the superior hemorrhoidal, which was as large as the femoral. The blood reached the

superior mesenteric through the left and middle colic arteries, which were double their natural size. extra- and retro-peritoneal plexus of the ordinarily small arterial vessels was enormously enlarged, and served as the channel of communication between the internal iliacs and the mesenteric arteries; this plexus ran along the sides and posterior surface of the rectum. The author states that this is probably the only recorded case of obliteration of the main trunks of the three anterior branches of the abdominal aorta supplying the viscera, and the subsequent establishment of collateral circulation. The author concludes as follows: "This case confirms the view that between the visceral and parietal branches of the abdominal aorta there exists a free communication through the sub- or extraperitoneal plexus of arteries, as described by Professor Turner in 1863. Enlargement of this system of arteries in the abdomen and pelvis may take place to such an extent as to become the channel of blood-supply to the abdominal viscera when their main arterial trunks are obliterated."

This article of Chiene's deserves careful study in the original.

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A REPORT OF THREE CASES OF EMBOLUS OF THE MESENTERIC ARTERY, WITH RE-MARKS ON THE SUBJECT.1

BY HOWARD A. LOTHROP, A.M., M.D.

THE subject of this evening's paper recalls to me three cases which I had the good fortune to observe recently, in one of the Vienna Hospitals. A few notes taken at that time serve to refresh my memory both in regard to the clinical history and the result of the autopsy some hours later. They were all fatal cases; all were adults, and, as the post-mortem showed, they were all hopeless from the outset.

CASE I was that of a man about thirty-five years of age, well developed and nourished, with the history of having always been well. No gastro-intestinal disturbance. Two days before entrance, he was seized with sudden, sharp, abdominal pain, followed by nausea and vomiting. At entrance he complained of less pain, but had marked general abdominal tenderness without distention. There was but slight rise of tem. perature, while the vomitus was dark in color and contained blood. The patient was suffering from consid-The next morning there were signs of erable shock. great collapse, while, in addition to the continued darkcolored vomiting, a diarrhea had set in which showed a considerable amount of blood in the stools. Patient had now become very anemic. During the day he continued to fail, relapsed into a deep coma, and died

** Journal Anatomy and Physiology, Edinburgh, vol. iii, p. 65, 1868.

late in the afternoon. No diagnosis was made with any certainty.

Autopsy. — On opening the abdominal cavity a small amount of nearly clear serous fluid escaped; all visible convolutions of the small intestine were of a chocolate-brown color, while their serous covering was less lustrous than normal. In great contrast was the normal large intestine, forming a frame, as it were, for the dark centre. The circulatory disturbance involved the entire jejunum and ileum without any wellmarked line of demarcation at either end. Thrombi could be seen radiating along the course of the mesenteric vessels, which were traced up to a common origin in the main trunk of the superior mesenteric artery. The contents of the small intestine were semisolid and of a dark-brown color, some of which had regurgitated into the stomach, while more had passed on into the colon. On tracing the thrombi to their origin and on opening the vessel, an embolus was found located in the superior mesenteric artery near the origin of the arterio colica media (see diagram). Secondary thrombi had formed along the course of this artery, distal to the seat of embolus. In the spleen were two scars, the result of old hemorrhagic infarcts. The heart was hypertrophied and dilated, and the mitral and aortic valves were the seat of a chronic endocarditis. Examination otherwise negative.

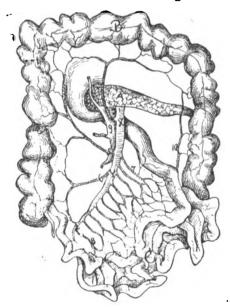


DIAGRAM SHOWING BRANCHES AND DISTRIBUTION OF THE SU-PERIOR MESENTERIC ARTERY.

1, 2. Main trunk. 3. Inferior pancreatico-duodenal. 4. Colica media. 5. Colica dextra. 6. Ileo-colic. 7, 8. "Intestinal branches" (about twelve in number). 9. Superior mesenteric vein. 10. Colica sinistra (branch inferior mesenteric artery). A. Pancreas. B. Ascending, transverse and descending colon. C. Colis of small intestine. X. Site of embolus in Cases I and III. Y. Site of embolus in Cases II. tine. X

CASE II entered the hospital moribund, and of the history I know nothing.

Autopsy on the next day revealed the characteristic picture as seen in Case I, although the area of chocolatebrown intestine was less extensive. There was no peritonitis, and measurement showed that about ten feet of ileum were included in the infarct. The embolus was in the superior mesenteric artery near the ileo-colic artery. A chronic endocarditis was present in this case.

CASE III was a man aged forty years, who entered the surgical ward with the history of sudden onset of acute abdominal symptoms three days previous. He had been vomiting from the outset, and had had diarrhea for the last twenty-four hours. There were traces of blood in the vomitus and stools. General condition very poor. Diagnosis uncertain.

Operation. — Median abdominal incision. serous fluid escaped, all visible coils of small intestine were dark red and injected. A careful search was made for the cause of this condition such as volvulus, intussusception, strangulation from bands or cords, obscure herniæ, etc., but all was in vain. The wound was closed, to be followed by death in about twelve bours.

Autopsy on the next day revealed a beginning peritonitis. The intestines presented a picture otherwise practically identical with that seen in Case I, which would seem to be more or less characteristic of embolus of the superior mesenteric artery. The embolus also had about the same location and its origin could be traced to the mitral valve.

Dr. Elliot has reported a favorable case, one which thout operation would have been fatal. These three without operation would have been fatal. cases were all fatal, and probably no procedure would have saved life in any one of them.

DIAGNOSIS.

The symptoms seen by me in these cases were those of a late stage; but these, together with the history obtained, leave us with a group which can be considered more or less characteristic of embolus of the superior mesenteric artery. They are:

(1) Sudden abdominal pain over a considerable area generally including the umbilical region.

(2) Nausea and vomiting — vomitus in late stages containing blood.

(3) General abdominal tenderness.

(4) Diarrhea, a rather late symptom. Stools apt to contain blood if patient survives for several days.

(5) Shock with constitutional disturbance, such as would be looked for in any case of acute intestinal

Given a case presenting such a group of symptoms, before arriving at a diagnosis of embolus of the superior mesenteric artery, we must consider and rule out such possibilities as -

Volvulus.
 Intussusception.

(3) Strangulation from bands or cords.

(4) Hernize of all kinds.

(5) Perforation of gastric or duodenal ulcer.

(6) Acute pancreatic affections.

As a further aid to diagnosis a complete physical examination should be made: the heart should be studied with reference to endocarditis; renal elements in the urine might suggest the possibility of embolus in the kidney; while old or recent cerebral symptoms might indicate the possibility of cerebral embolus as well as an atheromatous condition of the blood-vessels.

PROGNOSIS.

Prognosis depends upon — (a) General symptoms, as to whether the patient has strength sufficient to withstand the shock, both of the attack and that necessarily consequent on any operative procedure; (b) Local conditions, such as the character and seat of the

embolus. A septic embolus would almost inevitably result in a fatal peritonitis. A bland embolus would be more or less serious according to its point of arrest in the artery, which is made clearer by the following diagram, which shows the branches and distribution of the artery in question.

For the sake of classification I would consider three conditions:

- (1) Embolus sufficiently large to obstruct the artery near its origin. Death would seem inevitable, for this would cause a sudden loss of blood-supply to the jejunum, ileum and ascending and transverse colon. Cases I and III belong to this class.
- (2) Embolus in the main trunk of the artery, but distal to the ileo colic and several of the "intestinal branches." Death to be expected from peritouitis as a result of gangrene and perforation if left alone. Life may be saved by operative intervention and the necrotic intestine resected. Case II was an example of this class; and if the primary cause in Dr. Elliot's case was an embolus, I would include that here also.
- (3) If the embolus is sufficiently small to find its way into one of the "intestinal branches," no serious secondary results need be feared, for the collateral circulation is very free as seen by the diagram, and the the condition is as trivial as an embolus in one of the smaller branches of an artery supplying an extremity.

Autopsies reveal to us that emboli emanating from the left heart are by no means rare occurrences; and I believe that the reason why we so seldom hear from them in the superior mesenteric artery, is because they are either too large to enter that artery, or are too small to obstruct its main trunk, but pass on to a point of arrest where the collateral circulation is well pro-

TREATMENT.

Here we can be very brief. Disastrous results which would otherwise come from small emboli are guarded against by nature. This class of cases will pass unnoticed.

If embolus is diagnosed, operate, for neglect is sure Class I is fatal at best, Class II may be saved by resection.

If embolus is suspected, operate, for the dangers of an exploratory laparotomy in well appointed hospitals are less than the risk incurred by expectant treatment.

THE EFFECTS OF WARM DOUCHES, MASSAGE AND FRICTION UPON THE EXPANSION OF THE LUNGS.

BY DOUGLAS GRAHAM, M.D.

THERE are often more ways than one of accomplishing the same object, and much as we would like massage to prove the best, we sometimes have to concede that other means are more effectual. In an instructive article in the Revue d'Hygiène Thérapeutique, for July, 1894, Dr. J. Nicolas has given us the results of his experience, demoustrating that the warm douche alone produces greater pulmonary expansion than massage does alone. But we think, if he had combined the two he would have obtained greater expansion than from either; and if to both he had united passive and resistive movements of the arms to expand the chest, somewhat after the manner of artificial

the greatest expansion of all. However, the paper is so exceedingly interesting and valuable that it is well worth while to reproduce it in brief for those who may not have the opportunity of reading it in the

original.
The thermal station of Mont-Dore each year has a large number of patients affected with asthma, emphysema, or chronic bronchitis. For these the warm douches are frequently used, as well as the imbibition of the water and inhalation of the mineral vapors which constitute the basis of treatment. favor this threefold use of the water have hitherto regarded the warm douche as only a form of revulsion. The heat and the force of the percussion of the douche determine a powerful attraction of the blood to the skin at the expense of the deeper parts; and the perspiration which is thus provoked may bring about resolution or chronic engorgement of the lungs. But these effects hardly suffice to explain the comfort which the emphysematous patients experience immediately after the douche; neither do they account for the rapid modification which supervenes in their respiration.

Patients attacked with pulmonary emphysema having attracted the attention of M. Nicholas by the amplitude and the freedom of respiration after the warm douche upon the chest, he has verified their assertions by auscultation and by measurement, by means of the spirometer. He found that the vesicular murmur which was scarcely perceptible to the ear before the douche became clearly perceptible afterwards — a proof that there was more air introduced into the chest and with greater rapidity, and this was confirmed by the aid of the spirometer.

The respiratory capacity having been measured several days in succession and several times each day, before and after the douche, the figures below indicate an average.

CASE I. Slight emphysems, slight chronic bronchitis. Pulmonary capacity before the douche, 8,500 c. c. (333 cubic inches); after the douche, 3,800 c. c.

CASE II. Very pronounced emphysema, slight bronchial catarrh, frequent asthma at night. Pulmonary capacity before douche, 1,800 c. c.; after douche, 2,000 c. c.

CASE III. Bronchitis and empysema. Lung capacity before douche, 1,500 c. c.; after douche, 1,800 c. c. CASE IV. Emphysema with frequent attacks of

Lung capacity before douche, 1,500 c. c.; asthma.

after douche, 1,900 c. c.

Case V. Chronic bronchitis, empysema. capacity before douche, 1,800 c. c.; after douche, 2,100 c. c.

CASE VI. Emphysema and asthma. Lung capacity before douche, 1,100 c. c.; after douche, 1,300 c. c.

CASE VII. Chronic bronchitis and emphysema. Lung capacity before douche, 2,500 c. c.; after douche, 2,800 c. c.

It is useless to increase cases, as the results were uniform, and show an increased expansion of the lungs after the douche of from 200 to 300 cubic centimetres (12 to 18 cubic inches), on an average

From whence proceeds this expansion? It may be due in part to the reflex action which the douche by its warmth and strength of projection determines upon the respiratory nerve centres, and which thus causes cessation of the dyspnea. It may also be due in part respiration, there would, no doubt, have been obtained to the absorption by the lungs of the vapor and of the

carbonic-acid gas which are set free from the mineral water when the column of liquid is broken against the chest. The vapor and the carbonic acid calm the bronchial spasm, and thus facilitate the entrance of air into the lungs.

But, above all, the douche appears to act by the massage which it exerts upon the muscles of the thorax, exciting their contractility. And for this it ought to combine the following conditions of temperature, pressure and duration: The temperature ought to be about 38° Centigrade (100° F.); the water should be projected in a horizontal jet or vertical column, but not in the form of spray, which lacks force, and under a pressure of five or seven metres; the duration ought to be for seven to ten minutes, as this length of time is indispensable for the succession and repeated irritation of the muscles of the thorax.

In order to supplement the insufficiency of their respiration, emphysematous patients make involuntary efforts with all the muscles that are capable of increasing inspiration. Not only the intercostal muscles are called into extra play, but also all the muscles inserted into the thorax: the pectorals, the trapezii, the scaleni, the large dorsal, the large serrati and the sterno-cleido-mastoid increase their usual method of action and co-operate in the expansion of the chest. The massage produced by the douche increases the contractility of these muscles and the inspiratory effort thus becomes less difficult and more complete.

In healthy people who desire to inspire the greatest volume of air possible by extra efforts for the purpose of ascertaining their lung capacity, all the muscles capable of increasing the expansion of the chest are With these subalso called into their utmost play. jects the stimulation of the muscles of the chest and of the back by the warm douche also increases the amplitude of pulmonary inspiration, but to a less extent than with the emphysematous, as shown by the following experiments:

CASE VIII. Normal respiration. Lung capacity before douche of eight minutes, 3,050 c. c.; after douche, 3,200 c. c.

CASE IX. Normal respiration. Lung capacity before douche, 3,500 c. c.; after douche, 3,750 c. c.

The increase of muscular contractility is evidently the true explanation of the principal mode of action of the douche upon the thorax. Indeed, when the douche is replaced by friction upon the muscles of the chest and back nearly analogous results are obtained. experiments are reported in which massage has been practised — twice with the hand and twice with a flannel glove - for about eight minutes, care being taken to make the fingers penetrate into the intercostal spaces and to rub the pectoral, trapezii and other muscles in the direction of their fibres, but avoiding compression of the chest.

CASE X. Healthy subject. Lung capacity before massage, 2,800 c. c.; after massage, 3,000 c. c.

CASE XI. Slight emphysema. Lung capacity before massage, 3,500 c. c.; after massage, 3,700 c. c.

CASE XII. The same patient as No. XI is rubbed with a flannel glove for eight minutes. Lung capacity before friction 3,500 c. c.; after friction, 3,700.

Frictions with CASE XIII. Normal respiration. Before friction, 3,000 c. c.; after flannel glove. friction, 3,150.

made upon the same patient. In comparing the results, it is seen that the douche causes greater expansion of the lungs than massage or friction. On the other hand, massage or friction has the advantage of much more universal application, and even upon patients who are tuberculous or suffer from cardiac affections to whom the shock of the douche might be injurious.

The increase of respiration in consequence of the douche is not of long duration. Cold makes it cease rapidly; but in a warm and damp atmosphere the increase lasts a long time, three-quarters of an hour to an hour, during which respiration is more full and more free. It is, therefore, on sound common-sense that the custom has been established at Mont-Dore of first sending patients to the douche before making them sojourn in the inhalation rooms where they absorb by the lungs the vapor charged with the principal constituents of the mineral water, carbonic acid, iron and arsenic.

This action of the douche repeated finally determines a permanent increase of the respiratory capacity, as has been previously demonstrated by M. Nicolas. In this way the diminution of the oxygenation of the blood is compensated in the emphysematous; and this explains in great part the incontestable efficacy of the waters of Mont-Dore against pulmonary emphysems, besides the alterative action of the waters, which lessens the frequency of the cough and diminishes the abundance of the bronchial catarrh.

In order to cure chronic emphysema it would be necessary to restore the elasticity of the air-cells, to repair the loss of substance of the alveoli, to re-establish the capillary vessels that have disappeared; that is to say, that the absolute cure of emphysema is no more to be expected from thermal waters than from other ways of medication. But ameliorations can be brought about by means of mineral waters externally and internally, and especially those of Mont-Dore, which are almost equal to a cure.

Even as patients affected with narrowing of the mitral orifice can live without suffering so long as their valvular lesion is compensated by a sufficient hypertrophy and contractility of their heart muscle; so also those whose lungs are attacked with emphysems, find in the increase of pulmonary expansion and consequently in the introduction of a greater quantity of air, a compensation to the limitation of their field of They no longer experience aeration of their blood. the same anguish, and can, to all intents and purposes, consider themselves cured. All the hydriatic customs at Mont-Dore tend to this result, but the douche has an immediate action upon respiration to which it has seemed desirable to call attention.

The number of cases in which massage was used is hardly sufficient to base a trustworthy comparison upon. Most people who have had their chests massed will remember what delightful involuntary deep inspirations are produced. It would have been well if M. Nicolas had told us how the frequency of inspiration is affected by the douche and by massage. Generally respiration becomes much less frequent as well As expiration is as deeper and freer under massage. also hindered as well as inspiration in emphysems, better results would probably have been obtained if M. Nicolas had had his patients' chests compressed so as to aid the expiratory effort. And if to the douche, The observations on Cases I, XI and XII were all the massage and movements to aid in expanding and

contracting the chest, effleurage or stroking the limbs and body away from the heart toward the extremities, so as to retard the flow of venous blood and hinder it from crowding the right side of the heart and lungs, we feel sure that the mechanical treatment would be most rational and the best results would follow. Here is one of those very rare instances in which rubbing down would be better than rubbing up.

Medical Progress.

RECENT PROGRESS IN ANATOMY.

BY THOMAS DWIGHT, M.D.

STATISTICS OF VARIATION AND ANTHROPOLOGY.

FOR many years statistics of variations in structure have been collected by different observers. Facile princeps among these was the late Prof. Wenzel Gruber, of St. Petersburg. The lead, however, will soon fall to the indefatigable Professors Schwalbe and Pfitzner, of Strassburg. For five years the Anatomical Society of Great Britain and Ireland has done this work by collective investigations, that is, by the sending out of certain questions to the leading medical schools, and the tabulation of the answers by a committee. Similar work has been carried on in the dissecting-room of the Harvard Medical School. The publication by the writer 2 of certain observations made there on the frequency of the psoas parvus and pyramidalis led Professors Schwalbe and Pfitzner 8 while publishing certain new series of observations to claim that the differences in percentages of certain variations in different countries give them an anthropological significance. Some peculiarities seem to occur in different countries with one and the same frequency. To take an example almost at random: a third head of the biceps, springing from the brachialis anticus was found in France, by Testut, in 10.5 per cept.; in England, by Wood, in 10.3 per cent., and at Strassburg, by Schwalbe and Pfitzner, in 11 per cent. On the other hand, these last observers found the palmaris longus wanting in 20 per cent., while Gruber at St. Petersburg found it wanting in 12.7 per cent. Recently the collected results in Great Britain and Ireland show it wanting in 12.1 per cent. At Strassburg and St. Petersburg it is wanting decidedly more often in men than in women. This is not the case in Eng-Both in Russia and England the muscle was wanting some three per cent. more frequently on the left than on the right. At Strassburg there was no particular difference between the sides. These rather carious developments tend to make one question whether, in spite of the large numbers, the series are really as large as they need to be. With regard to the psoas parvus, the differences are considerable. Russia seems to differ materially from other countries. Schwalbe and Pfitzner give the following table showing the percentage in which it is wanting:

0 1				-	
In St. Petersburg					49%
In Strassburg .					57%
In Massachusetts					61%
In England .	•	•	•		64%

The most striking discrepancy is shown in the form ¹ Journal of Anatomy and Physiology, vol. xxix, October, 1894, and

of the bifurcation of the common carotid between the inhabitants of Strassburg and those of Breslau. 20 per cent. of the former there was found the so-called candelabra form of division, which occurred in 60 per cent. of the latter. The observations on the pyramidalis are also very curious. The following table shows the percentage of cases in which it was wanting.

						Men.	Women.
In Strassburg						14%	10%
In Massachuset	ts					18%	27%
In Great Britain	n au	nd Ir	elan	d.		21%	23.5%

Two points are very essential for correct results in these investigations. The first is that the series should be large enough to give a constant average. Thus if in 100 subjects a certain muscle is found wanting in 3 and in the next 100 in 12, it is certain that a series of 100 is too small, and it is probable that one of 200 is not large enough. The difficulty is increased when the results are subdivided to show the condition in the two sexes and in the opposite sides of the body. Series which seem trustworthy as a whole are so no longer when broken up. The other essential point is that the material should be homogeneous. In certain countries it probably is so; in others it certainly is not.

LEVEL OF TERMINATION OF THE SPINAL CORD.4

The collective investigators of Great Britain and Ireland, already referred to, have considered this question. It speaks volumes for the zeal of those in charge of the dissecting-rooms that the answers should show observations on 198 subjects, 115 male and 83 female.

"A glance at the table will show that there is greater tendency for the cord to reach a lower level in the female than in the male. Thus, whilst the cord terminates in 43 per cent. of cases in the female opposite the second lumbar vertebra, it only reaches this level in the male in 27 per cent. of the cases. In the female the chances of its terminating opposite the first or second lumbar vertebræ are just about equal (42 and 43 per cent.), whilst in the male the chances are just double that it will terminate opposite the level of the first lumbar vertebra (54 per cent. opposite first lumbar vertebra, and 27 per cent. opposite second lumbar vertebra). Two cases are recorded in which the cord in males terminated as high as the twelfth dorsal vertebra, whilst in females the highest point attained was the disc between the twelfth dorsal and first lumbar vertebra. The lowest point reached by the cord was noted in a male, as occurring on a level with the upper border of the third lumbar vertebra."

THE SMALL INTESTINE.

The following paper by Dr. Sernoff, of Moscow, shows small results for great labor, but the method used is worthy of mention. His object is to study the topography of the folds of the jejunum and ileum. Thinking it desirable to fix the gut and the mesentery, he injected a 12-per-cent. aqueous solution of pure chromic acid through the femoral artery with moderate pressure for an hour and a half or two hours, the circulation in the extremities being prevented. The subject was then left in a cold room for four or five hours. The intestines and mesentery should then be found of the consistency of gutta percha.

One of Sernoff's most interesting results is an accessory one, namely, the development and situation of the

preceding volumes.

2 Proceedings American Philosophical Society, 1893.

5 Morphologische Arbeiten., Bd. iii, Heft 3, 1894.

Journal of Anatomy and Physiology, vol. xxix, October, 1894.
 Internat. Monatschrift für Anat. und Phys., Bd. xi, 1894.

valvulæ conniventes. According to the usual account itself is very small. The ascending colon may run these are highly developed in the upper part of the obliquely up to the middle of the abdomen under the small intestine, amount to less about the middle, and liver, and then almost immediately down again to the finally disappear altogether. Sernoff states that in chromic-acid subjects these folds are found as much in one part as in another. They are, however, less regularly transverse below than above. They suffer, moreover, very little diminution in size. In all parts of the gut there are places quite without valves. Usually these places are at the convexity of folds. He, therefore, regards the valves not as fixed unchangeable structures, but more like the folds in the stomach, depending on the condition of the muscular coats.

It was recorded a few years ago in these Reports, that Henke had described a plan of the arrangement of the coils of the small intestine as follows: on the left they are transverse; in the middle and right they are vertical. A single piece of gut connects these two divisions which are separated by a line along the edge of the left psoas. Sernoff has figured this arrangement as beautifully shown, but this he found quite the exception. The writer's experience is much the same. Sernoff finds that we can recognize five groups of folds, though the matter is of little practical value. First, those at the top just below the transverse colon and its mesentery. These are always horizontal and transverse. Second, those of the true pelvis which are also horizontal, though some run forwards and backwards. Third and fourth, the folds to the right and left of the spinal column, which are always vertical. those in the middle at the front of the abdomen which are absolutely without order. Our author's observations are far from numerous so we should be surprised if this scheme should ever reach general acceptance. There is another point, however, which he mentions as constant, namely, the termination of the ileum, rising from right to left out of the true pelvis, turning over its edge to reach the cecum.

Sernoff does not, of course, mean to deny the occurrence of anomalously placed ceca, which are getting all too common. Indeed, he himself relates two cases in which it was found much displaced; once closely fastened to the left side of the fourth lumbar vertebra, and once to the underside of the transverse colon.

ANOMALIES OF THE LARGE INTESTINE AND RELA-TIONS OF THE RETRO-PERITONEAL CONNECTIVE TISSUE.7

It is impossible to attempt a full abstract of this excellent paper, on account both of its length and complexity; but it is one which should be known and studied by all interested in abdominal practice, either surgical or medical. The author calls it a topographical-clinical study. The anatomical points are frequently illustrated by cases and autopsies. For instance, the very rare occurrence of a sufficiently long mesentery of the ascending colon to permit the fold to become twisted is verified by an autopsy. This length of mesentery is not to be confounded with malposition of the origin of the mesentery from arrest of development with which cecum and ascending colon may be found floating free in the front of the abdomen. Needless to say, there is much on exceptional positions of the cecum. The variations of the transverse colon and of its two flexures are also discussed. Sometimes both flexures are wanting, and the transverse colon

other side, thus cutting both corners of its usual course. Sometimes, on the contrary, the transverse colon shows a double fold. The relatively enormous sigmoid flexure of the infant sometimes persists. Curschmann remarks that in these cases the large intestine is always uncommonly long. A peculiar arrangement is one in which the lower part of the sigmoid flexure is followed by a large fold passing into the rectum on the right side, near to the cecum, and sometimes even connected with it. The importance of this anomaly in diagnosis is evident.

Of the second part of the paper, relating to the retro-peritoneal connective tissue, we shall notice only the remarks on the place at which a peri-nephritic abscess breaks through into the pleural cavity. This occurs near the last rib. It seemed to Curschmann that the point of rupture might not be wholly accidental. Many researches showed him a weak point in this region. Though he probably refers to the same place, his description is less clear to us than that in Quain's Anatomy: "It frequently happens that fleshy fibres spring only from the inner portion of the external arched ligament, and in that case a triangular interval is left between the vertebral and costal portions of the muscle, through which the areolor tissue of the thoracic cavity becomes continuous with that of the abdomen." Thus the point is not a new one, but it is worth dwelling on. We may add that, according to Curschmann, this weak spot is a pretty constant one.

CALIBRE OF THE SMALL INTESTINE.

Drs. Chaput and Lenoble⁸ made a series of experiments on the cadaver to ascertain the safety of using Murphy's largest button for intestinal suture. This model has a minimum diameter of 26 mm., and a minimum circumference of 81.5 mm. They find that the lower end of the small intestine, well known to be its smallest part, is of smaller calibre than the ileo-cecal valve. They found that the internal circumference of the lower end of the ileum when not blown up averaged only 32 mm. After insufflation, in four cases, the external circumference was 78, 80, 83 and 110 mm. But they found, on cutting these blown-up intestines, that their internal circumference was greatly reduced by valves so as to equal only 50 mm. The authors believe that in life these valves project still more prominently.

ANOMALY OF RENAL ARTERIES AND VEINS.

The following observation by Morestin is sufficiently curious to deserve mention. The age and sex of the subject are not noted. On the left there were two large renal arteries arising from the aorta, from two The upper one divided to three centimetres apart. into two immediately after its origin. These entered the hilus at the upper end, and the other at the lower. Two large renal veins filled the space between these arteries, crossing each other like the arms of an X The lower one passed in front of placed on its side. the aorta, the other behind it. Each opened separately into the cava. There was a short but free communication between them where they crossed. The spermatic vein divided, sending a branch to each. On the

Arch. für Anat. und Physiol., 1891.

H. Curschmann, of Leipzig: Deutsches Archiv für klin. Med., Bd. 53, Heft 112, 1894.

Bull. Soc. Anat., Paris, 1894, Nos. 10 and 11.
 Loc. cit., Paris, 1894, No. 12.

right this arrangement is curiously reversed. The two veins are parallel running one above and the other below the arteries, which cross each other like an X. The superior artery shortly after its origin divides into two which travel together.

THE IMPRESSIONS FOR THE FIFTH PAIR OF NERVES AND THE GASSERIAN GANGLION ON THE PETROUS PORTION OF THE TEMPORAL BONE. 10

A depression near the apex of the petrous portion is usually mentioned in anatomies, some stating that it is for the ganglion, others for the nerve. According to Rauber, neither of these views is quite correct. He has studied the point on about one hundred skulls, and has dissected the soft parts on twelve heads. concludes by recognizing the following features: (1) A curved cut in the superior border of the petrous portion for the nerve. (2) A groove on the upper (anterior) surface of the bone, running downwards and outwards for the sensory root. (3) A depression for the gasserian ganglion, which, however, is only occasionally large enough to receive the whole of it. Usually it only supports the outer part of the ganglion. It may be wanting. (4) When the last-mentioned feature is wanting, there is a rounded cut in the lower border of the anterior surface of the petrous portion.

Reports of Societies.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

C. L. SCUDDER, M.D., SECRETARY.

REGULAR Meeting, Wednesday, November 7, 1894, Dr. F. B. HARRINGTON was chosen Chairman for the ensuing year.

Dr. Francis S. Watson read a paper on

INTESTINAL GANGRENE DUE TO EMBOLISM OR THROM-BOSIS OF THE MESENTERIC ARTERIES, WITH RE-PORT OF A CASE.¹

DR. D. W. CHEEVER: On the morning of October 11th, when I got to the City Hospital about ten o'clock - I mention this particularly to show that there was no delay in the case - I found an old man about seventy in the accident-room who had been brought in by his son from one of the suburbs. He was not moribund, though he was subnormal in temperature, had a certain lividity about the face, very rapid pulse, and an immensely distended abdomen. The history, so far as could be obtained, was that he had had symptoms of intestinal obstruction for three and a half days; that those symptoms began with intense pain, that his temperature had been near normal, or subnormal; and that no operation had been got from the bowels during that time. When I saw him he vomited, and the vomitus was not strictly fecal, but very dark and offensive, though not bloody. He had two herniæ, both of which were down. They were, however, apparently easily reduced, and were not edematous or tender. As far as treatment went, he had taken cathartics himself, which he had promptly vomited; had been given some opium; and on the evening before his entrance, as an examination by Drs. Reynolds and

Crowell revealed a thick or punky feeling in the rectum, an effort had been made to secure an operation of the bowels by a large enema of two quarts, which had been thrown into the rectum, and all of which had been retained. As he was not moribund it was thought proper, as the friends expected it, to open the abdomen and see if anything could be done. No accurate diagnosis was made in my own mind, except the general one of intestinal obstruction. After he was etherized a median incision was made, and a plan was carried out which I had formulated in my own mind, but which proved to be a signal failure. The incision at first was made four inches long beginning at the pubes, but immediately there were disclosed very distended coils of intestine; and as the incision was not long enough, I extended it to one inch above the umbilicus, so that we had a very long incision. My plan was, after getting the abdomen open, to aspirate the distended coils of intestine, and then to endeavor to find the source of obstruction. As soon as we opened the abdomen, there presented themselves two enormous coils, which resembled in some respects the cases that have been detailed to-night. I was particularly struck with the loss of gloss of the intestine; there was no shine to the peritoneum; the surface looked soft and pulpy; the color was dusky red, but not black; it was not even chocolate colored. The intestines were not matted together by adhesions, nor was there any bloody fluid in the general peritoneal cavity. On aspirating I found, to my great annoyance, that the inestine was so rotten that fluid began to flow around the needle the moment the puncture was made, and on slight pressure, the needle would tear the intestine; and this mass of bowel, which was large intestine as shown by the longitudinal bands on it, distended enormously with the enema which had been given the previous evening, began to leak out great quantities of offensive yellow fluid, but no blood; and under these circumstances I ceased the aspiration, pinched up the opening and checked the flow, washed out the surface as well as I could, and endeavored to find some source of obstruction. Here I was met with a great surprise. Here was the large intestine distended with fluid. Evidently the obstruction was not in the rectum. It occurred to me that it was probably about the ileo-cecal valve. On finding that region, I found the small intestine healthy, not distended, extremely shrunken and collapsed and not the seat of obstruction. It was evident that any obstruction by twist or intussusception could not exist; in fact, that no cause for obstruction apparently existed; and the only thing I could think of was paralysis of the large intestine from general peritonitis. The patient bore up pretty well; and as farther search seemed useless, it seemed to me the cardinal rule was to be followed of making an artificial opening, and relieving the distention. Taking the portion of the distended bowel on the descending coil I opened it, and an immense quantity of fluid gushed out, but no blood. The intestine collapsed and was sewed up to the wall, the abdomen was washed out with sterilized water, and the wound partially closed; and the man put to bed with this artificial anus. Immediate relief of the symptoms followed, and for twelve hours he was extremely comfortable; the vomiting ceased; the contents of the bowel flowed out easily through the opening; he took nourishment and showed signs of rallying. The operation was done about eleven in the morning; the same night he began

¹ See p. 552 of the Journal.

¹⁰ Anatomisches Anzeiger, Bd. ix, Nr. 22, 1894.

to fail, distention returned, hiccough occurred, and he hospital; it was reduced by operation, and the wound collapsed and died in thirty hours after admission to the hospital. It was noticed in this patient that the arteries of the wrist were very atheromatous (autopsy). This, then, would seem to be a case like those referred to by Dr. Lothrop, in which the plug was in such a place that any treatment would have been hopeless.

Dr. H. O. MARCY: Some time last spring a woman of possibly eighty became ill with symptoms of intestinal obstruction. She had been in previous pretty good health. Symptoms came on slowly; at last the obstruction was complete - nausea, vomiting, great distention of the abdomen, as in Dr. Cheever's case, but the symptoms were rather more gradual. I saw the case in consultation. We, feeling that the case was not necessarily fatal, notwithstanding her age the other organs were healthy - advised laparotomy for exploration, thinking it probable that she had some obstruction that might be amenable to treatment. Our advice was not accepted, and about a week later she died. At the autopsy embolism of the mesenteric artery was clearly defined, and about two feet of the small intestine was necrotic. The line of demarcation was not very clear. The interesting thing was the extremely atheromatous condition of the descending aorta, showing that we had abundant reason for finding such condition. As Dr. Porter said, until I began to look up the subject it was a new chapter in surgery to me, and I was surprised to find this condition of things was to be kept in surgical consideration. I was conversing some time ago with Dr. Frank S. Billings, and he says it is not at all uncommon to find embolism of the mesenteric artery and gangrene of the intestine in horses, even in young animals in otherwise healthy

DR. F. B. LUND: In looking up cases of extensive resection of the intestine I found six or seven cases where over one hundred centimetres had been resected. and it was found that those who survived the immediate effects of the operation got along very well without suffering from malnutrition. One case, however, was reported by Baum where about four feet were resected, that died after four months, and no other cause for death could be found at autopsy than malassimilation from removal of too much intestine. That was the only case in these extensive resections that has suffered in nutrition. It seems to me that a practical point is brought out by this successful resection in reference to strangulated hernia. It is said by nearly all writers on strangulated hernia that where there is the question of immediate enterorraphy after resection of a gangrenous piece of gut it is necessary to find out whether it is near the duodenum, because if it is near the duodenum the continuity of the intestinal canal must be immediately restored or the patient will die from malnutrition. When it lies low down in the ilium it is feasible to establish an artificial anus without danger of the patient's nutrition suffering. If four feet of the jejunum can be safely resected without interfering with the nutrition of the patient it would seem that the point of the location of the gangrenous knuckle is not so important in deciding the question of enterorraphy after resection of the intestine.

DR. F. B. HARRINGTON: In this connection I should like to speak of a case of gangrene of the rectum following operation. Whether this has any bearing on the subject or not, perhaps it is worth reporting. The pasubject or not, perhaps it is worth reporting. tient (sixty-five) had a femoral hernia, and came to the | * See page 557 of the Journal.

closed by the operation for radical cure. knuckle was found not larger than the tip of the finger, pretty dark colored; but her condition had not been very bad. The patient did well for several days. Going round the wards one day, I found her sitting up, not by orders, however. She was put to bed, and a few days afterward it was noticed that there was a sloughing spot about the anus. This condition extended around the anus, and the parts became very foul. In a short time masses of the rectum came away, and within a week large pieces came away, one piece four inches in length. The entire sphincter sloughed off, and a large portion of the tissues in the ischio-rectal fossa, especially on the right side. There was evidently obliteration of the blood supply in some way. The patient did well for a week or more, when these symptoms followed. Whether it was due immediately to the gangrenous piece of intestine that was returned or whether it was due to her age and other conditions, we did not know. The patient gradually failed, and was taken from the hospital, and died about a week after she left. No autopsy was obtained. In that case there evidently was a gangrene from obstruction of some kind. It is quite possible that that being a left femoral hernia, a portion of the sigmoid flexure may have been included, and that there was a gradual extension to the hemorrhoidal veins.

Dr. Watson: I have a specimen of the appendix which I think shows exceedingly prettily in miniature the same condition we have been talking about to-night. I removed its mesenteric attachment entire in this case, with the appendix, tying them off in one piece. There is apparently an embolic condition of the vessels through the mesentery, and an infarction of the appendix without any perforation as yet, but one beginning, clearly defined necrotic area on the appendix, and one on the mesenteric surface. This specimen suggests that in some cases of appendicitis the process may originate in embolism of its mesenteric blood-vessels.

Dr. H. A. LOTHROP reported

THREE CASES OF EMBOLUS OF THE MESENTERIC

Dr. E. A. TRACY, of South Boston, showed a

NEW MATERIAL FOR THE MANUFACTURE OF SPLINTS.

It consists of wood pulp reinforced by gauze. He showed various splints used for different parts of the body made of this material.

PATHOLOGICAL SPECIMENS.

DR. H. O. MARCY presented some interesting speci-

No. I. Cancer of the left femur. Mrs. W., age sixty-one, was never robust. I removed the left breast for carcinoma two years ago. Last May she had pain in the left thigh, which was continuous until death. Nothing objectively noticed until last summer. Shortening slowly supervened without evidence of injury. Early in September a weight was applied for extension and fixation, but the leg was soon nearly three inches shorter than the right, with a large bowing outwards of the thigh. She was sent home from the country late in September, and was confined to bed with pain and weakness. Death occurred November 3d from acute changes supervening in the left lung,

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very likely embolic. No return of disease in left

The specimen shows the remarkable combination of the processes of repair with those of disease. No fracture had taken place, but the periostitis has caused a callus to be deposited, making the very crooked enlarged bone quite firm. Autopsy limited to examination of leg.

No. II. Here are the ovaries and tubes from two patients upon whom I operated this morning. Histories not unlike. Pelvic pain, semi-invalidism, with very marked reflex disturbances. One was thought by her physician to be upon the verge of insanity. There were pelvic adhesions, and the tubes were distended, as may be observed, to the size of small sausages, and were thought by the assistants when brought into the wound to be coils of small intestine. Abdominal wound closed without drainage and sealed with collodion. [November 19th, convalescence rapid and uneventful. Union primary.]

Cambridge, upon whom I operated because of a large, old, irreducible hernia. Age forty-eight. Otherwise difficult operation. But convalescense has been very well. Has worn a "Sherman" truss, the spring pad satisfactory. of which has caused so much absorption and thinning of the abdominal wall, that exterior to the ring there is a direct opening through the fascia admitting the tips of two fingers. The neck of the thick omental tumor is felt nearer the median line, nearly wrist size. The specimen shown is the untouched deformed omentum, which it seemed best to remove. It was nearly the size of two outspread hands. The cord was dissected free quite to the internal ring, the sac freed within the ring, held tense, sutured across its base and resected. The inner border of Poupart's ligament was sutured to the inner border of the conjoined tendon, fixing these structures to the transversalis fascia quite to the lower border of the internal ring. The cord was replaced in the new canal thus formed, and the external aponeurotic structures closed over quite to the level with the upper border of the os-pubis, thus reforming the external ring. The structures are evenly coapted without undue tension by the double continuous buried tendon suture; the skin is coapted by a buried suture, and the wound sealed with iodoform [November 19th. collodion. Primary union has supervened without pain or edema.]

No. IV. Mr. M., age seventy-one. For years had an old, large, irreducible scrotal hernia. Recently a truss-vender applied very indiscreetly a strong pressure without upon the neck of the tumor, causing ecchymosis and such swelling that an immediate operation was considered necessary. The tumor extended quite one-third to the knee, measuring about eighteen inches in circumference. By estimate there was a pint and a half of fluid in the sac; it also contained this large fatty tumor, fist size, which had apparently developed in the retained omentum. This was attached to the base of the sac. It was freed over the mesenteric attachment, then sutured across and resected; the stump was overcast and returned within the abdomen. Through this large opening several pints of ascitic fluid escaped. This is the sac which was resected after suturing its base. It was quite as large as a baby's head. The parts were closed with double buried tendon sutures and the wound sealed without drainage. Twenty-six days after the operation the man died of an interstitial nephritis and hepa-

titis (liver about half the normal size). The specimeas from autopsy are unusually interesting. portion of the omentum shows the repair which had supervened at the site of resection, with a portion of the tendon suture scarcely changed in its appearance. The closed peritoneum is here shown as smooth, firm and glistening, without adhesions. It will be noted that the abdominal wall is thick, firm and strong, the skin wound only a line. In a word, the repair processes had supervened in a perfectly normal manner, although the subject was a sufferer from chronic organic changes which caused his death.

The cancerous uterus from a vaginal hysterectomy in a very large, thick-walled woman of fifty, said never to have had suffering until she first noticed a slight bleeding in July. It is presented to show that the organ had enlarged to this size - that of the fist - by multiple fibroids. It was everywhere fixed by adhesions, and the right tube was dilated to the size of the finger and filled with pus. Because of No. III. This was a patient of Dr. Hildreth, of hemorrhage, I opened the abdomen for the first time in my experience with vaginal hysterectomy - a very

> No. VI. A very large, very multiple uterine myoma. A hemorrhagic case. Patient very anemic, weighing less than ninety pounds. Uterus removed by first ligating the broad ligaments, and then reflecting a peritoneal flap anteriorly and posteriorly quite to the cervix, which was then sewed through with tendon and the tumor resected. The flaps were then inverted and closed by a continuous parallel tendon suture, drawing upon which closely approximates the healthy peritoneum evenly over the stump while the suture itself is buried from eight. Abdominal wound closed

> without drainage. Recovery rapid and uneventful.
>
> No. VII. The last specimen shown is by far the most interesting, perhaps unique. It is a case of spina bifida in a girl of seventeen. The tumor was the size of half an orange at birth; now it measured twenty-nine inches in circumference, and the sac contained one gallon of a perfectly white, slightly albuminous fluid of a specific gravity of 1.010. The patient had consulted many surgeons, but I advised operation because of the rapidly growing tumor and its large size, making the danger of rupture imminent. The sac was dissected to the base, opened, the cauda found attached, was freed and returned. The sac was sewed across with a double continuous tendon suture and resected. The opening was through the lower two lumbar verte-The stump of the sac was stitched to the strong muscular aponeurosis upon either side, the flaps closed down upon the muscles, and the skin closed with a buried tendon suture and sealed. The union was primary and the cicatrix is firm. Operation done October 16th. Patient a bright, strong girl. Table during operation was on an inclined plane with head low.

ERGOTIN FOR THE NIGHT-SWEATS OF PHTHISIS. Goldendach reports excellent results from the subcutaneous use of ergotin in the treatment of phthisis, to control the night-sweats. Twenty minims of a solution made according to the following formula are given at bedtime:

Alcohol, dilute	•	•		•	•		•	. 3 parts
Glycerine } Distilled water			•		•	•		each 5 parts

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OCCLUSION OF THE MESENTERIC ARTERY

It is only of late that the diagnosis of cases of obstruction of the superior mesenteric artery has received any attention, and but one case, that of Dr. J. W. Elliot, has been reported where the condition was relieved by operation. We publish to-day instructive reports of new cases in surgical practice, and also references to previous cases as recorded. The reader's attention is directed to previous pages of this JOURNAL.

The condition is comparatively rare. It is difficult to understand why this should be. At autopsies, evidences of obstruction of branches of the splenic and renal arteries, shown either by recent infarctions or by the cicatrices resulting from old ones, are exceedingly common. The obstruction is usually due to emboli coming from thrombi in the left side of the heart or in the aorta. We can frequently find the evidences of past attack of acute endocarditis as well marked by the old infarctions of the kidney or spleen as by the thickening of the endocardium. It is difficult or impossible to understand why a solid substance in the blood current should, in obedience to some physical law, find entrance into these vessels in preference to others. The superior mesenteric artery would seem to favor the entry of emboli into it more than either the renal or splenic arteries. It comes off from the aorta at a more acute angle, and is wider than those arteries. Emboli must frequently enter into it, but they do not produce the same effect as in the kidney and spleen. In these organs all the arteries are terminal, that is, every arterial branch supplies a definite portion of tissue and has no anastomosis with neighboring branches. Whatever the condition of the circulation, obstruction of one of these branches is followed by anemic necrosis of the area of tissue supplied by it. There may be varying degrees of hemorrhage into the anemic territory. The final result is organization and cicatrization of the infarcted area. Infarction of the kidney can

be experimentally produced by injecting solid substances into the aorta.

It is probable that embolus in these arteries is not more common than in other arteries, but the results are always seen. We see the same thing in the lungs. Every embolus which is thrown into the blood current from the venous side of the circulation must enter into the pulmonary artery and be carried into the We find recent thrombi with infarction in the lungs, but we do not find cicatrices which have resulted from old thrombosis and infarction. The pulmonary arteries are terminal and they must frequently receive thrombi. No result ordinarily follows because there is such an abundant anastomosis between the capillaries of the part supplied by the thrombosed artery and the neighboring capillaries that the integrity of the tissue is preserved. In addition to this abundant capillary circulation, all parts of the lung receive a small supply of blood from the bronchial arteries. As a rule, we only find infarction of the lung when the venous pressure is raised so high, either from mitral stenosis or regurgitation, that the low pressure of the blood in the thrombosed territory, coming as it does from the neighboring capillaries, cannot overcome it.

Probably the same thing is true in the mesenteric artery. It is probable that embolus of certain branches or even of the entire artery is not so very uncommon; but it does not, in the ordinary conditions of the circulation, give rise to infarction. The different branches of the artery anastomose freely with one another and receive anastomoses with the branches of the inferior mesenteric below and the gastro-duodenal above. Under ordinary conditions of the circulation these anastomoses would provide a sufficient supply of blood to preserve the integrity of the tissue. Infarction would take place either when the venous pressure was so raised, from cardiac or hepatic obstruction, that the low pressure in the thrombosed area could not overcome it, or when from any cause the arterial pressure was so low that the anastomosing branches could not send sufficient blood into the territory. In looking over the cases reported, one must be struck both by the frequency of coincident cardiac disease and by the age of the patients. Disease of the arteries would also favor the production of infarction by preventing a sufficient dilatation of the anastomosing arteries. Tying the superior mesenteric artery in a dog will produce infarction of the small intestine, but the operation produces engorgement of the portal veins and fa-Thrombosis of the artery is much less vors infarction. apt to be followed by infarction than is embolism, the slow occlusion of the artery giving time for the establishment of the collateral circulation. Aneurism and occlusion of the artery in the horse is not uncommon and is seen without producing infarction.

It would be interesting to make corrosion preparations of the artery in all cases in which embolism could have occurred, in order to determine its frequency. Even when the circulation is sufficient to prevent infarction, paralysis of the bowel may take place, as is shown in the case reported by Councilman ¹, there was slig in which the artery was partially occluded in an old woman with weak circulation.

During the

A CASE OF EMBOLISM OF THE ABDOMINAL AORTA.

JÜRGENS² reports the following extremely rare case from the clinic of Dr. Dehio in Dorpat.

The patient was a student of pharmacy, twenty-seven years of age, with no history of rheumatism, but since childhood subject to palpitation of the heart and shortness of breath on exertion. Five years ago he suffered from edema, which disappeared under treatment by digitalis, leaving behind, however, shortness of breath and palpitation. During the following years he suffered from a slight cough in addition to his other troubles, but on the whole considered himself in fairly good health.

On April 4, 1894, he was taken suddenly with fever and a sensation of burning at the pit of the stomach, and so marked a weakness in the legs that he fell. There soon followed pain, swelling, and redness of the left leg, bluish discoloration over the back of the foot and numbness, followed by anesthesia and motor paralysis. The physician who was called found a systolic murmur at the heart's apex, and an irregular pulse. He improved under treatment; the swelling diminished and sensation partially returned, but no motion.

Two and a half weeks later, on the morning of May 6th, the patient was again seized with sharp pains in the abdomen, followed in a few hours by paraplegia with almost complete loss of sensibility in the lower half of the body, with incontinence of urine and feces. On his admission to the hospital at 4 P. M., it was found that since his former attack he had suffered from constipation and loss of appetite, and that lately his abdomen had become somewhat distended. He was then suffering from constipation, loss of appetite, thirst, retention of urine, pain in the abdomen, and palpitation.

On physical examination were found a bluish "marbled" appearance of the dependent portions of the lower extremities, and of the abdominal wall from the symphysis pubis to a height of three fingers' breadth. The legs were cold, and the hypogastrium colder than the epigastrium; there was no motion of the knee, ankle- and toe-joints, and very slight motion of the hip-joint. Anesthesia was complete over both lower extremities, except the upper part of the left thigh, where it was partial. The cremaster reflex was absent, the abdominal refiex present only over the epigastrium. The femoral pulse on both sides was barely perceptible, the malleolar pulse not present. The sensation of the upper part of the body, and the motion of the arms was normal. The respiration was deep, but rapid (40 to 42). The heart's area was enlarged downward, and to the left, and there was a loud systolic mitral murmur. The abdomen was distended, and

See page 555 of the Journal.
 Münchener Med. Woch., October 28, 1894.

there was slight dulness in the flanks; otherwise nothing abnormal.

During the next few hours the discoloration extended to the anterior portion of the lower extremities, and spread a little higher on the abdomen, and the abdomen became markedly distended and tympanitic. Then the femoral pulse disappeared, the skin became cold and moist, the radial pulse grew gradually more rapid, in spite of stimulation; and at halfpast ten death occurred, preceded by vomiting of stomach contents discolored with blood. At the autopsy there was found stenosis and insufficiency of the mitral valve and anti-mortem thrombi in the left auricle. In the abdominal cavity there was found a little bloody serous fluid; the intestines were distended with gas and fluid; the peritoneal coat shining, but of a dark purple color; numerous sub-peritoneal ecchymoses. The stomach was distended, containing about a litre of bloody fluid. Throughout the whole of their extent the small intestines contained dark bloody fluid; the mucous membrane was edematous and cyanotic. The same changes were present in the large intestine. The spleen was enlarged, and contained areas of hemorrhagic infarction. The kidneys also showed the presence of infarcts. In the abdominal aorta, extending from the left renal artery to the inferior mesenteric, was an old adherent, stratified, brown clot, which did not entirely fill the lumen of the aorta, but left room between its left and anterior surface for a second smooth, soft thrombus, which lay close to the intima, and completed the closure of the aorta. This second thrombus extended upward as far as the superior mesenteric, and first lumbar arteries. Below the old thrombus first described, other thrombi extended downward and "rode" the bifurcation of the aorta, extending into both external and internal iliac arteries. An old thrombus was also found in the left femoral artery.

Reviewing the history of the case, Jürgens concludes that on April 14, 1894, a blood-clot, disengaged probably from the wall of the left auricle, found lodgement in the aorta, between the left renal artery and the inferior mesenteric, partially closing the latter, and as a result producing the constipation and abdominal distention of which the patient complained during the next two weeks. This formed the oldest portion of the thrombus described above. A portion of it was broken off at the time, and occluded the left femoral artery, producing the changes in the left leg. The gradual growth of the aortic thrombus, coupled with increasing heart weakness, led on the 6th of May to complete occlusion of the aorta, with the rapidly fatal result above related.

Of interest in connection with the subject of the articles in this number of the JOURNAL, is the occlusion of the superior mesenteric artery, which occurred in this case, not from thrombosis of that artery itself, but from thrombosis of the aorta extending across the origin. The presence of blood in the intestines, evidenced during life by bloody stools or vomitus, and

verified by autopsy or operation, is an important sign of superior mesenteric thrombosis.

The subperitoneal ecchymoses, likewise described in mesenteric thrombosis, were present in this case, also the edema and cyanosis of the submucous coats.

Although Jürgens regrets that no investigation was made of the condition of the superior mesenteric artery in this case, he feels sure, and we think rightly, that it must have been occluded by the thrombus which extended up to the level of its opening into the aorta.

FOOTBALL.

The present discussion in regard to football has clearly shown the ignorance of many who by their criticism of the game have designated the whole sport as brutal. And even in the game in question the charge of brutality narrows itself down to one, possibly to two, players. Those who are so eager to censure and cry down a sport on account of the actions of a few should, at least, be willing to give to that sport its just deserts, and be ready to recognize the benefits which accrue to many from a healthy indulgence in it.

Football, as it should be played, teaches a man selfreliance, command over self, and perseverance. It cultivates perception, ability to judge quickly, and the power of concentration. A man to play football must have his wits about him. His opponent is pressing him closely; he must hear and interpret the signals as they are given and then act quickly. The moment the play starts he must call his physical and mental powers into activity. He must do his share of the work; he must be ready to take advantage of any misplay; he must look for unprotected places and govern himself accordingly. Obstacles are thrown in his way which must be overcome; and when, in addition, he grows weary from physical fatigue, he must learn to force himself to do what but a few moments before required no especial effort. Football teaches a man, therefore, how to contend against opposition and, best of all, how to contend against opposition from himself. It teaches, or should teach him, self-denial and selfcontrol.

What other sport is there in the world which so closely combines so many demands upon the physical and mental qualities of our youths? It can be truly said that it demands too much of all, if all were to play it. But football is not a game for every college man to indulge in. The narrow-chested and puny should carefully avoid it, and, in avoiding it, regret that their fathers and mothers, in their day, had not seen fit by proper indulgence in healthy exercise to guarantee to them a sturdy constitution and a healthy frame. The chances of the game may result in a few broken bones, but the benefits derived help, in no small measure, towards producing a generation of healthy, courageous and manly individuals.

Because a game is rough and has not as yet been ment. What h regulated in a proper measure, are we as Americans ically known by going to throw over the entire sport? Are we going wherever found.

to confess that we are unable to take advantage of its strong, healthy points, and simply say it is too rough a game for boys to play? The games of tennis and golf have their followers; baseball and rowing have their enthusiasts. All these games develop healthy men. But football is the only sport which in the same measure develops the majority of the qualities of which we as Americans are most proud.

Rather let us sacrifice a few bones, than give our young men the idea that they must be strong but careful not to expose themselves to the danger of getting hurt. The time may come when Americans may again be called upon to contend against other nations, and if we are to make babies of our youths the imprint of our counsels will be plainly seen upon them. Let us rather make a point of seeing that they learn to play fairly; that they learn to govern their brute instincts, that only those who are able to do this are permitted to indulge in rough play.

If a player is known to be brutal, he should never be allowed on the field. If a man is or becomes unfit physically, he should be kept out of it. But once and for all, let us not give the youths of the day the impression that the only sports to be indulged in are those which do not call for courage. To the timid, a vigorous, well-fought football game is an unpleasant spectacle, and they shudder to think of the possibilities. They do not like the game because they themselves never had the courage to play it, and even if they did they never played it well. To a man of physical courage, however, the game seems different. His blood tingles as he sees a runner throw off his opponents and dodge down the field. His heart goes with the player, and he mentally urges him on. He feels the uncertainty as the last guard to the goal is neared, and if the runner is well tackled his congratulations go out to the man who had the courage to stop that rush. A man of courage knows too well the dangers of the game, but he also knows how much greater are its benefits.

There are points, however, upon which both the timid and the courageous agree, and these are the incidents which from time to time take place and make one ashamed of those who are playing. These are the brute exhibitions of a brutal nature.

Football men must see to it that hereafter they do not present the spectacle of unfair play to the prejudiced opponent as well as to the enthusiastic lover of the game, lest these both of necessity be brought to act together to enforce the suppression of this sport.

The football season of 1894 has just closed. There has been a great hue and cry against the danger and brutality of the game, yet it will be found that very little serious damage has been done among college youths. On the contrary, the football men of our colleges have gained muscle, experience and a good stock of health. There is no question but that, before another season opens, changes must be made in the rules and a proper provision made for their vigorous enforcement. What has in the last few weeks been generically known by one player's name must be eliminated wherever found.

DIPHTHERIA ANTITOXIN IN NEW YORK.

THE New York City Board of Health under direction of Drs. H. M. Biggs and W. H. Park, have thirteen horses and some other animals in process of immunization against diphtheria. The inoculations of toxine were begun seven weeks ago, and the Board will probably be ready to furnish the first supplies of antitoxin serum before the end of January. The New York Board was enabled to begin its operations thus early through the generous act of a private citizen who advanced the necessary funds. The appropriation of \$30,000, which the Board has asked for, would not be available through the ordinary channels before January.

There is no question, as we have before stated, but that the production and quality of such agents as the antitoxines, must be under the supervisory control and guarantee of some responsible organization.

MEDICAL NOTES.

SMALL-POX IN DUBLIN, IRELAND .- During November there was an alarming outbreak of small-pox in the drapery establishment of Pim Brothers, at Dublin, fourteen cases being removed to Cork-Street Hospital in one week.

THE SMALL-POX AMEBA. - Dr. Maximilian Herzog, of Chicago, claims to have discovered a "smallpox ameba," the presence of which in the blood on the first or second day after vaccination, is the only sure test of a successful vaccination. No matter how swollen the arm or uncomfortable the patient, the vaccination is not effective unless the "ameba" is found, the unpleasant symptoms being due to the vaccine points being loaded with croton oil, or some other

DIPHTHEBIA AND SPEAKING-TUBES .- An outbreak of diphtheria involving twenty-two of the workinggirls in a certain place of business in Hackney, England, led Dr. J. K. Warry to investigate the causes of contagion. He found that three of the girls whose work was nearest the speaking-tubes, and who therefore most frequently sent and received messages, were the first to come down with the disease. The tubes were used at times by every one of the work-girls, but most frequently by these three. The large majority of the girls attacked worked in a large room at the top of the building, but a shop assistant on the ground floor whose special duty it was to answer the speakingtube calls from the affected room, was also found to be suffering from sore throat. Were the Klebs-Löffler bacilli transmitted along the whole length of the tube? If so, this bacillus infects at longer range through tubes than in the open.

THE DANGERS OF RAILWAY TRAVEL. — In the records of the Nuremberg Railway, the first line constructed in Germany, there is said to be preserved an regret is expressed at the retirement from the position interesting protest against railway travel, made by the of Surgeon-General of the State of Dr. Joseph D.

following passage: "Travelling in vehicles drawn by locomotives ought to be forbidden in the interest of public health. The rapid motion cannot fail to produce in passengers the mental affection known as delirium furiosum. Even if travellers are willing to expose themselves to this danger, the government ought at least to protect the public. A single glance at a locomotive going at full speed is enough to produce the same cerebral trouble; it is therefore absolutely necessary to build a fence ten feet high on each side of the railway line."

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. - During the week ending at noon, November 28, 1894, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 138, scarlet fever 33, measles 29, typhoid fever 24. During the week ending at noon, December 5, 1894, the following cases were reported: diphtheria 121, scarlet fever 53, measles 70, typhoid fever 8.

Admission to Massachusetts Medical Society. An examination for admission to the Massachusetts Medical Society will be held by the Censors of the Suffolk District, at 19 Boylston Place, on Thursday, December 20, 1894, at 2 P. M.

CHARLES RIVER DAM. - At the last regular meeting of the Cambridge Medical Improvement Society, which was held at the Colonial Club, Cambridge, Monday evening, November 26th, the Charles River Dam and Basin, proposed by the Joint Board of Park Commissioners and State Board of Health was carefully considered in relation to its probable effect upon the health of the towns and cities upon its banks. known physicians from the places to be affected — Newton, Waltham, Watertown, Brighton, Boston and Cambridge — were present by invitation, and took part in the discussion. It was then voted unanimously, that in the opinion of the meeting the proposed dam would improve the sanitary condition of the river and of the adjacent lands. It was also voted to send a copy of the above vote to the Board of Harbor and Land Commissioners. Fifty of the leading physicians of the district were present.

NEW YORK.

MOUNT SINAI HOSPITAL .- The Mount Sinai Hospital has received a legacy of \$10,000 from the estate of the late Adolph Bernheimer, a wealthy brewer.

THE MONTEFIORE HOME .- The new wing of the beautiful Montefiore Home for chronic invalids, on the Western Boulevard between 138th and 139th Streets, which has just been completed at a cost of \$40,000, was opened on Thanksgiving Day with appropriate ceremonies. Among the addresses made was one by Hon. Charles S. Fairchild, ex-Secretary of the Treasury.

SURGEON-GENERALSHIP OF NEW YORK .- Much Royal College of Physicians of Bavaria, containing the Bryant, who during the past ten years has done so

much to increase the efficiency of the medical department of the National Guard. It is announced that Governor-elect Martin has determined to appoint in his place Dr. M. O. Terry, a homeopathic practitioner of Utica.

MRS. MARY E. MOTT died at New Hackensack, N. Y., on November 25th, at the age of nearly 105. Mrs. Mott was born in Mulberry Street, New York, January 14, 1790; her husband, George B. Mott, was superintendent of the lunatic asylum on Blackwell's Island at the time of his death, forty-four years ago.

MEDICAL COLLEGE FOOTBALL TEAMS.— The football craze has extended to the medical colleges of New York and Brooklyn, and during the past month a number of matches have been played. The championship game came off on Thanksgiving Day at the Columbia Oval at Williamsbridge, when the eleven of the College of Physicians and Surgeons defeated those of the Long Island College Hospital by a score of 6 to 0. The contest is described as a very rough one, but no serious casualties were reported.

DIPHTHERIA ANTITOXIN AT BROOKLYN. — Dr. Jesse T. Duryea, medical superintendent of the Brooklyn hospital for contagious diseases at Flatbush, reports that out of fourteen cases of diphtheria treated with antitoxin, twelve recovered. In the two cases of failure the disease had reached a very advanced stage before the remedy was applied. The serum was received from Berlin, but as the supply was soon exhausted, Dr. Duryea some time ago began the experiment of preparing it himself by the inoculation of horses.

Babies Hospital.— The formal opening of the new addition to the Babies Hospital, at the corner of Lexington Avenue and 55th Street, took place on November 24th. Dr. T. E. Satterthwaite, of the Board of Directors, presided, and the medical report for the past year was read by Dr. L. Emmett Holt, the physician in charge. The principal address was made by Dr. A. Jacobi, and after some closing remarks by Bishop Potter, the hospital was thrown open for public inspection. The institution maintains a dispensary for out door patients and also a summer home at Oceanic, N. J.

THE DISPOSAL OF GARBAGE. — The advisory committee appointed last July, to investigate and report on the best manner of disposing of the city's garbage, of which ex-Mayor Franklin Edson is chairman, and the President of the Board of Health one of the members, made a report to the Mayor on November 22d. The committee inspected the garbage reduction plants in Boston, Philadelphia, Chicago and other large cities of the United States, and also those of London, Liverpool, Manchester and other English cities. Among the recommendations made by them were the following: That dumping be prohibited in the harbor; that garbage be kept separate from ashes, in galvanized iron vessels with tight-fitting covers; that the garbage be disposed of by the reduction process, producing fer-

tilizers and grease; that a separate collection of other refuse be made, and that this be used for filling at Ricker's Island or elsewhere; that the street sweepings be sold for fertilizing purposes; and that watertight carts, which should be disinfected before leaving the wharf, should be employed for carrying away the sweepings.

Miscellanp.

HARVARD MEDICAL ALUMNI ASSOCIATION.

This flourishing organization has just issued Bulletins Nos. 6 and 7. No. 6 is a well-arranged, accurate catalogue of the names and residences of all its members, with an excellent index. It was prepared, as was the previous one, by the Association's Treasurer, and is of practical use. There are 1,114 members, scattered in almost all the United States and in several foreign countries.

Bulletin No. 7 is a record of the meetings during the past year and of the annual dinner. The speeches of the eminent medical guests and others are instructive and entertaining.

The Association is financially prosperous, is a power in the country for the advancement of higher medical education, and the Harvard Medical School is deriving benefit from the organization. The Association may be congratulated on its good work. All graduates of the Harvard Medical School are eligible to membership.

A FRENCHMAN'S IMPRESSIONS OF FOOTBALL.

At the Harvard-Pennsylvania game of football played last year at Cambridge, Paul Bourget was an onlooker. His lurid impressions are given in the last chapter of "Outre Mer," from which we take the following brief extract:

The signal is given and the play begins. It is a terrible game, which, by itself would suffice to indicate the differences between the Anglo-Saxon and the Latin worlda game of young bulldogs brought up to bite, to rush upon the quarry, a game fit for a race made for wild attack, for violent defence, for implacable conquests and struggles even to extermination. With their leather vests, with the Harvard sleeves of red cloth, and the Pennsylvania blue and white vests and sleeves, so soon to be torn — with the leather gaiters to protect their shins, with their great shoes and their long hair, floating around their pale and pink faces, these scholarly athletes are at once admirable and frightful to see, as soon as the demon of contest has entered into them. At each extremity of the field is a goal, representing, at the right end, one of the teams, at the left the other. The entire object is to throw [sic] an enormous leather ball, which the champion of one or the other side holds in turn. It is in waiting for this throw that all the excitement of this almost ferocious amusement is concentrated. He who holds the ball is there, bent forward, his companions and his adversaries likewise bent down around him in the attitude of beasts of prey about to spring. All of a sudden he runs to throw the ball, or else with a movement of wild rapidity he hands it to another, who rushes off with it, and whom it is necessary to

The brutality with which they seize the bearer of the ball is impossible to imagine without having witnessed it. He is seized by the middle of the body, by the head, by the legs, by the feet. He rolls over and his assailants with

him, and as they fight for the ball and the two sides come to the rescue, it becomes a whole heap of 22 bodies tumbling on top of one another, like an inextricable knot of serpents with human heads. This heap writhes on the ground and tears itself. One sees faces, hair, backs or legs appearing in a monstrous and agitated melée. Then this murderous knot unravels itself, and the ball, thrown by the most agile, rebounds and is again followed by the same fury. Constantly, after one of these frenzied entanglements, and when the knot of players is undone, one of the combatants remains on the field motionless, incapable of rising, so much has he been hit, pressed, crushed, thumped.

It is well that M. Bourget was not present this year at Springfield.

THE MORTALITY AMONG RUSSIAN PHYSI-CIANS.

THE study of the relative mortality rates of various professions is an interesting and suggestive one, and has already demonstrated the high death-rate of the medical profession and the shorter duration of life of physicians over many other classes of men.

Some interesting statistics on this subject have recently been published by M. Zelande in Wratsch. There are in Russia between 15,000 and 16,000 physicians and during the years 1891, 1892 and 1893, a study of the mortality statistics was carried on by M. Zelande. The average mortality each year was 18.9 per cent., the total number dying in the three years being 642. In 417 of these the cause of death was not obtained, but the remaining 225 fell into the following divisions:

Gastro-intesti	nal d	lise	180							1
Morphinism										1
Erysipelas										1
Hepatic disease	50					•	•			1
Glanders .										1
Freezing .	•					-	-	•		1
Dysentery	•	-	·	-		-	·	·	•	8
Pyemia .	Ţ.	Ī	•	•	Ī	•	•	Ť	•	2
Diphtheria	•	•	•	•	•	•	•	•	•	4
Renal disease	•	•	•	•	•	•	•	•	•	6
	•	•	•	•	•	•	•	•	•	0
Grippe .	•	•	•	•	•	. •	•	•	•	6
Cancer .		•		•	•	•	•		•	7
Typhoid fever	٠.			•						7
Cholera .										9
Cerebral apop	lexy									9
Paralysis and			rebr	al af	fectio	ons				10
Cardiac diseas							•	-	•	10
Accidents	~	•	•	•	•	•	•	•	•	11
	•	•		•	•	٠	•	•	•	
Pleurisy and p	pneu	moı	118	•	•	•	•	•	•	12
Sudden death		•	•	•	•	٠		•	•	17
Suicide .								•		20
Tuberculosis									•	84
Typhus fever	•		•	•	•	•		•		51
	Tota	al								225

Such figures permit the following conclusions:

"(1) The foremost place is filled by contagious diseases, contracted in all probability at the patient's bedside, typhus fever, diphtheria, cholera, etc., a total of 71 such cases; so that nearly a third of the physicians of Russia, the cause of whose death is recorded, fell, as it were, on the field of battle.

"(2) The second place is occupied by tuberculosis, which caused the death of 15.1 per cent of the whole number of physicians dying, while in general statistics it furnishes but 11 to 13 per cent. of all deaths.

"(3) Suicide is relatively very frequent among Russian physicians reaching 8.8 per cent., and is said to be increasing every year."

STATUS AND PAY OF JAPANESE ARMY SUR-GEONS.¹

THE surgeon-general of the Imperial Army has the rank of major-general and the same amount of salary, 300 yen per month, the yen being equivalent to about 75 cents of our money. Surgeou-inspectors, whose position is analogous to that of colonel and assistant surgeon-general in the United States Army, have the rank of colonel and a salary of 193 yen per month, or 3 yen more than a colonel of cavalry receives, and 15 more than a colonel of infantry. Surgeons of the first class rank as lieutenant-colonel, and their pay, 143 yen, bears the same relation to that of a regimental lieutenant-colonel that the pay of an inspector does to that of regimental commanders. Surgeons of the second-class, with the rank of major, draw 93 yen monthly. Assistant surgeons of the first class, and pharmacists of the same grade, have 52 yen, or the pay of a captain. Assistants and pharmacists of the second class rank as first lieutenants and have the pay of the grade, 32 yen. Assistants and pharmacists of the third class have the rank and pay, 26 yen of the second lieutenant. These medical, like other officers of the army, have increased pay when assigned to special duty; those on duty in the War Department, for instance, having an increase amounting to about one-third of the regular salary of their grade.

¹ Medical Record, October 27, 1894.

RECORD OF MORTALITY
FOR THE WEEK ENDING SATURDAY, NOVEMBER 24, 1894.

	à	the	Ę	Per	Percentage of deaths from						
Oities.	Estimated population.	Reported deaths in each.	Deaths under five years.	Infectious diseases.	Acute lung diseases.	Diarrheal diseases.	Diphtheria and oroup.	Scarlet fever.			
New York	1,956,000	644	210	14.56	17.76	2,26	7.68	1.92			
Chicago	1,600,000	—	} —	-	_	_	-	_			
Philadelphia .	1,139.457	390	120	17.68	10.40	1.30	13.26	.52			
Brooklyn	1,013,000	336	114	22.04	20.30	1.45	15.95	.29			
St. Louis	540,800		=		l .						
Boston	501,107	204	63	21.56	14.70	1.47	14.70	1.47			
Baltimore	500,000	-	_		_	_	_	-			
Washington .	285,000		-					=			
Cincinnati	325,000	103	34	13.58	12.61	5.82 3.18	5.82 5.30	.97			
Cleveland	825,000	94	40 31	27.56	10.60	6.96		19.08			
Pittsburg	272,000	86	91	19.72	17.40	0.30	5.80	_			
Milwaukee	265,000	22	4	9.10	9.10		4.55	4.55			
Nashville	87,754	39	8	8.10	9.10	l =	7.00	1.00			
Charleston	65,165	30	_	_	_	=	_	_			
Portland	40,000 100,410	20	6	15.00	5.00		5.00	_			
Worcester	92,233	33	10	21.21	6.06	3.03	9,09	_			
Fall River Lowell	90,613	36	13	2.78	16.68	2.78	3.00	_			
Cambridge	79,607	21	4	23.50	9.52	2	_	9.52			
f	65,128	23	7	17.40	4.35	_	8,70	4.85			
Springfield	50,284	īi	2	18.18	9.09	9.09					
Lawrence	49,900	_	_	_	_		_	_			
New Bedford .	47,741	22	9	9.11	4.55	4.55	_				
Malmaka	43,848	-	_	_			-	_			
Brockton	33,939	10	2	20.00	40.00	_	10.00	_			
Salem	33,155	7	8	14.28	14.28	_	14.28	_			
Haverhill	82,925	13	8	_	7.69	_		_			
Malden	30,209	7	8	14.28	14.28	_	_	_			
Chelses	29,806	13	2	46.14	15.38	_	46.14	_			
Fitchburg	29,3+3	8	2 3 2	25.00	12.50	12.50	12.50	-			
Newton	28,837	5	2	_	-	_	_	_			
Gloucester	27,293	l .i				_	-	_			
Taunton	26,954	15	7	33.33	6.66	_	33.83	-			
Waltham	22,058	5	1	60.00	20.00		60.00	_			
Quincy	19,642	6	4		_	-	-	_			
Pittsfield	18,802	ŏ	4	- 1		1111	-	_			
Everett	16,585	5	1	-!	20.00	_		-			
Northampton .	16,331	_		-!	-	-	_	-			
Newburyport .	14,073	4	_	— j	_	_	=	_			
Amesbury	10,920	2	2	- 1	_		_	_			

Deaths reported 2,219: under five years of age 717; principal infectious diseases (small-pox, measles, diphtheria and croup,

¹ Médesine Moderne, No. 76, 1894.

diarrheal diseases, whooping-cough, erysipelas and fevers) 395, acute lung diseases 322, consumption 288, diphtheria and croup, diarrheal diseases 49, scarlet fever 43, typhoid fever 36, whooping-cough 14, malarial fever 8, small-pox 6, erysipelas 5, measles 4, cerebro-spinal meningitis 3.

From typhoid fever Philadelphia 7, New York and Brooklyn 5 each, Pittsburgh 4, Fall River and Cambridge 3 each, Boston and Providence 2 each, Cincinnati, Springfield, Malden, Pittsfield and Hyde Park 1 each. From whooping-cough Brooklyn 7, Boston 4, New York, Providence and Pittsfield 1 each. From who was a single for the Pittsfield 1 each. malarial fever Philadelphia 3, Brooklyn and Boston 2 each, New York 1. From small-pox New York 6. From erysipelas Pittsburgh 2, New York, Brooklyn and Worcester 1 each. From cerebro-spinal meningitis New York 2, Providence and Worcester 1 each

ter 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending November 17th, the death-rate was 17.1. Deaths reported 3,427; acute lung diseases 245, measles 108, diphtheria 73, diarrhea 67, fever 51, whooping-cough 37, scarlet fever 35, small-pox (Birmingham and Liverpool 2 each) 4.

The death-rate ranged from 10.7 in Croydon to 26.3 in Newcastle-on-Tyne; Birkenhead 13.3, Birmingham 19.2, Bradford 17.5, Huddersfield 11.6, Hull 20.1, Leeds 18.2, Leicester 11.0, Liverpool 20.3, London 15 3, Nottingham 15.9, Portsmouth 15.2, Sheffield 18 5, Sunderland 23.8, West Ham 15.8.

METEOROLOGICAL RECORD,

For the week ending November 24th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:-

	Baro- meter		erm ete:			Relative humidity.			ction	Velof w	eity ind.	We'	inches.	
Date.	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 Å. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Rainfall in in
S 18 M 19 T 20 W 21 T 22 F 23 S 24	30.18 30.00 30.59 30.20 30.26 30.08 29.98	36 38 24 38 44 44 40	41 46 34 49 50 50 44	31 30 15 27 39 38 36	53 85 36 78 78	73 47 62 92 63 78 83	63 66 49 85 70 85 75	S.	E. W. S.W. N.W. N.W. W. S.W.	12 7 13 8 14 14 12	6 20 12 11 2 16 6	T.	F. C. C. R. C. R. C.	.02
	30.17		45	31	_		71		-					.14

*O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threat ning; N., snow, † Indicates trace of rainfall ** Mean for week.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FIFTEEN DAYS ENDING NOVEMBER 30, 1894.

MURRAY R. D., surgeon. To proceed to Key West Quarantine and assume command of station. November 17, 1894.

CARTER, H. A., surgeon. To proceed to Norfolk, Va., and assume command of Service. November 17, 1894. Granted leave of absence for fifteen days November 20, 1894.

Wasdin, Eugene, passed assistant surgeon. To proceed to Pittsburgh, Pa., and assume command of Service. November 21, 1894.

WILLIAMS, L. L., passed assistant surgeon. Granted leave of absence for sixteen days. November 20, 1894.

MAGRUDER, G. M., passed assistant surgeon. To proceed to Galveston, Texas, and assume command of Service. November 21, 1894.

KINYOUN, J. J., passed assistant surgeon. Granted leave of absence for six days. November 26, 1894.

PERRY, T. B., passed assistant surgeon. Granted leave of absence for thirty days. November 20, 1894.

GOODWIN, H. T., passed assistant surgeon. To proceed to Cincinnati, O., to inspect unserviceable property. November 20, 1894.

GUITERAS, G. M., passed assistant surgeon. Granted leave of absence for ten days. November 28, 1894.

GEDDINGS, H. D., passed assistant surgeon. To proceed to South Atlantic Quarantine and assume command of station. November 21, 1894.

PERRY, J. C., passed assistant surgeon. Granted leave of absence for thirty days. November 24, 1894.

Young, G. B., passed assistant surgeon. Granted leave of absence for ten days. November 20, 1894.

STRAYER, EDGAR, assistant surgeon. To proceed to Boston, Mass., for duty. November 22, 1894.

BLUE, RUPERT, assistant surgeon. To proceed to Charleston, S. C., for temporary duty. November 21, 1894.

PROCHAZKA, EMIL, assistant surgeon. Leave of absence granted. November 14, 1894. Cancelled. November 26, 1894.

THOMAS, A. R., assistant surgeon. To rejoin station, 8t. Louis, Mo. November 1d, 1894.

CUMMING, H. 8., assistant surgeon. To proceed to Norfolk, Va., for temporary duty. November 22, 1894. Granted leave of absence for eighteen days. November 27, 1894.

PRIZE OF THE AMERICAN NEUROLOGICAL ASSOCIATION.

The American Neurological Association offers a prize of \$200 for the best essay on any subject connected with Neurological Science.

Science.

This competition is open to physicians who are legal residents of States in North and South America.

Essays must be sent to the Secretary of the Association on or before the tenth day of May, 1895.

Each essay shall be accompanied by a sealed envelope containing the name and address of the author, and bearing on the outside a motto, which shall also be inscribed upon the

Essays ahall be typewritten, in either the English or French languages, and with the pages securely fastened. The Council of the Association reserves the right to reject any

or all essays judged unworthy of the award.

Each essay must exhibit original research, and none will be accepted that has previously been published.

GRÆME M. HAMMOND, M.D., Secretary,
58 West 45th Street, New York City.

HARVARD MEDICAL SCHOOL. EVENING LECTURES.

The next lecture will be given on Thursday evening, December 13th, at 8 o'clock, by Prof. Thomas Dwight, LL.D. Subject, "Applied Anatomy of the Head and Neck in Adults and Children." Physicians are cordially invited.

SOCIETY NOTICE.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.— A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday, December 10, 1894, at eight

o'clock, P. M.

Dr. W. H. Baker: "The Removal of the Uterine Appendages for Nervous Disease." Discussion opened by Dr. John Homans

and Dr. R. T. Edes.
Dr. W. M. Prescott: "Is Acute Lobar Pneumonia Ever
Caused by Etherization?" Discussion opened by Dr. M. H. Richardson and Dr. H. L. Burrell. JOHN T. BOWEN, M.D., Secretary.

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the Medical Society of the State of New York for the Year 1894.

Hepatic Abscess, with the Report of a Clinical Case. By W. Blair Stewart, A.M., M.D. Reprint. 1894.

Transactions of the American Ophthalmological Society, Thirteenth Annual Meeting, Washington, D. C., 1894.

Report on Typhoid Fever in the District of Columbia. Submitted by the Medical Society of the District of Columbia to the Committee on the District of Columbia of the U. 8. House of Representatives, June 14, 1894. Washington: Government Printing Office. 1894.

Abbott's Bacteriology; The Principles of Bacteriology; a Practical Manual for Students and Physicians. By A. C. Abbott, M.D., First Assistant, Laboratory of Hygiene, University of Pennsylvania, Philadelphia. New (second) edition. With 94 illustrations, of which 17 are colored. Philadelphia: Lea Brothers & Co. 1894.

Brothers & Co. 1894.

Fibroid Diseases of the Lung, Including Fibroid Phthisis. By Sir Andrew Clark, Bart., M.D., LL.D., F.R.S., Late President of the Royal College of Physicians, London; Consulting Physician to the London Hospital and to the City of London Hospital for Diseases of the Chest, Victoria Park; W. J. Hadley, M.D. (Dur.), M.R.C.P., Assistant Physician and Pathologist to the London Hospital, etc.; and Arnold Chaplin, M.D. (Cantab.), M.R.C.P., Assistant Physician to the City of London Hospital for Diseases of the Chest, Victoria Park, and to the East London Hospital for Children, Shadwell. With tables and eight plates in colors. London: Charles Griffin & Co. (Limited). 1894.

Tecture.

THE MILITARY MEDICAL OFFICER IN PEACE AND WAR.1

BY JOHN VAN RENSSELAER HOFF, Major and Surgeon, United States Army.

(Continued from No. 23, p. 551.)

THE senior medical officer having completed his round of professional visits, returns to the hospital to inspect its sanitary condition, police, the "diets," etc., during which inspection the junior accompanies him.

The food for a military hospital comes from the commissary, which means, in army parlance, the storehouse pertaining to the commissary department, containing the various articles of the ration (part of the regular allowances of an enlisted man); it also contains other articles of food, and certain additional things, as brushes, combs, buttons, thread, etc, which can be purchased at cost price.

The ration, as officially designated, is the established daily allowance of food for one person. Its components are as follows: 12 oz. of pork, bacon or canned beef, or 20 oz. of fresh beef, or 22 oz. of salt beef; 18 oz. of soft bread or flour, or 16 oz. of hard bread, or 20 oz. of corn meal; 2.4 oz. of beans or peas, or 1.6 oz. of rice or hominy; 1.6 oz. of green coffee or 1.2 oz. of roasted coffee, or .3 oz. of tea; 2.4 oz. of sugar; .3 gills of vinegar; .6 oz. of soap; .6 oz. of salt; 16 oz. of potatoes.

These components of the ration have a money value, and, practically, the material or the money may be drawn. The management of the ration, what to draw and what to save, is a matter of great importance to the successful conduct of the hospital, for upon it depends the variety of food, in other words, the character of the table.

The money received for the sale of the part of the ration saved, constitutes the hospital fund. This fund is augmented in various ways. In the first place, it is increased by a dividend from the profits of the post exchange (enlisted men's club); this, however, is allowed to the men of the hospital corps detachment only, and not to the sick, which is a rank injustice, for the sick need the delicacies which this dividend upon their own investment would buy. It is further increased by a charge to officers and certain enlisted men for board while under treatment in the hospital, by savings made in flour, etc. The hospital fund is used chiefly to purchase food and delicacies for the sick.

The Medical Department itself issues a certain amount of "hospital stores," so-called, such as liquor, meat extracts, condensed milk, sugar, soap, candles, etc., though this list has recently been materially reduced, and the difficulty of properly feeding the sick correspondingly increased. Those hospitals that are so fortunate as to have a garden to draw upon for fresh vegetables, and a cow to supply fresh milk, have great advantages over those not so provided.

The hospital dispensary is a well-appointed drugstore on a small scale. The medical and surgical supplies for the army are furnished by the Medical Department, those ordinarily issued and the amount thereof required for different sized commands are set forth in an official publication, called the "Standard Supply Table." This pamphlet is a mine of valuable

 1 A lecture read before the Medical School of Harvard University, October 18, 1894.

information to one wishing to supply a command in garrison, camp or field. It not only teaches the proper routine of obtaining and accounting for supplies pertaining to the Medical Department, but it contains valuable suggestions as to other supplies pertaining to other military departments, the quartermaster's, commissary, ordnance, etc., from all of which the medical officer must obtain little or much to complete his out-For example, the quartermaster's department builds the hospital, which the Medical Department furnishes within and uses; it makes the tents for the field, and the ambulance wagons which become for the nonce the moving hospital; it supplies heating apparatus, water, etc.; it also supplies all the clothing used by the enlisted men of the hospital corps and by the patients under treatment (except night-shirts).

The Commissary Department, as already stated, is practically the source of food-supply for the army; for while much that is eaten does not come directly from that department, the money with which it is purchased

certainly does.

The Ordnance Department furnishes the arms and

equipment for the sanitary soldier.

But as would naturally be inferred, the medical officer depends upon his own department for most of the material with which his work is done. Nor is he absolutely confined to the limits of the supply-table; for anything he needs will be given him, if the reasons therefor are sufficiently cogent. Should he desire to investigate a new remedy, a sufficiency of it will be issued him. Should be require some unusual surgical appliance, the asking will obtain it. Should he wish to make bacteriological or chemical investigations, the necessary apparatus will be sent him. All the department asks is that what is required will be properly and diligently used, and, as evidence thereof, that a report upon the results of investigations be made.

The inspection over, the young officer betakes himself to the library, to await his chief, the senior medical officer. The library, familiarly termed the surgeon's office, is the medical headquarters of the hospital. It usually contains bookcases supplied with well-selected medical works, to which each year, a few of the best of the recent publications are added. A number of the standard medical journals furnish current professional information, and the place invites to study.

The senior medical officer, having completed his rounds and given such orders as are required, then has time to examine the recruits who desire to enlist, or have already been enlisted by the regimental recruiting-officers. This is one of the most important duties a medical officer has to perform, and upon its proper performance the whole military superstructure depends.

The War Department has laid down very strict regulations regarding the physical examination of applicants for enlistment; and it is presumed that when a man has been passed by the medical officer, he conforms to the physical requirements and is in normal condition. Precedent to his physical examination, a careful investigation as to antecedent character, etc., is made by the recruiting-officer, and references are looked A detailed statement covering these points, and his physical history, is signed by the applicant; and he is informed that if this statement is false, he will be punished for fraudulent enlistment. Contrary to public opinion, not one-quarter of the men who apply for enlistment are accepted, and as a result, the general average among enlisted men is far above that of the same class in civil life.

Desiring to impress upon the mind of his pupil the importance of the work, into a knowledge of which he is about to be initiated, the senior premises the examination by a few words, outlining the objects sought and ends to be gained in the physical examination of recruits.

The governments of all civilized nations, especially those to whom large standing armies have become a necessity, are fully alive to the great importance of the judicious and careful examination of recruits. The importance of this examination has a twofold aspect, as a pecuniary question and as a military necessity.

The Austrian regulations say "that the duty of inspecting conscripts and recruits requires the utmost skill, impartiality and circumspection on the part of the medical officer." The Prussian regulations set forth that "the duty of inspecting recruits and of determining whether they are fit or unfit for the military service of the country is one of the most difficult and responsible a medical officer has to perform. To enable him to execute it correctly and with suitable promptitude he would require more knowledge and experience than is generally supposed. The regulations of our own bureau of the provost-marshal general, the offspring of the war, 1861-65, say that the duty of inspecting men, and of determining whether they are fit or unfit for the military service of the country requires the utmost impartiality, skill, and circumspection on the part of the examining surgeon for upon the manner in which this duty is done, will depend in a very great degree the efficiency of the army.' He must bear in mind that it is the number of bayonets in the field, and not the number of names on the rolls that determines the strength of an army.

The regulations governing physical examination are, briefly, as follows:

The examination must be conducted in the daytime, in a large, well-lighted room, furnished with table, platform-scales and measuring-rod. None other than those whose presence is absolutely required, should be admitted to the room. The man is to be examined stripped; this requirement would seem to go without saying, but its neglect during the early days of the War of Secession has probably cost our government millions in pensions. I read in the report of a medical officer of that time, that early in the war it happened to him to be present at the muster-in of several regiments of volunteers, and to make a so-called physical examination of the men composing He says: "My duty consisted in walking through the ranks with the commanding officer, to point out those disqualified for military duty. I was not permitted to examine them stripped. During the progress of this hasty and most superficial examination, I saw not a few blind, some variously deformed and others decrepit from old age, and found it necessary to reject so many that the commanding officer was constrained to expostulate with me." Another writer says: "I know of several regiments in which the medical inspection was performed by the surgeon walking down the line and looking at the men as they stood in ranks."

The examiner should have a measuring tape, stethoscope, Snellen's vision test-types, skeins of wool for determining color perception, and materials for vaccination.

The recruiting sergeant, or other intelligent assistant, should be carefully instructed in the proper manner of performing the various movements required of the candidate; and these the latter will imitate, while the examining officer inspects him both front and rear.

"The person of the recruit," says Tripler, "should be washed clean before he is presented for inspection. It is impossible for the medical officer to ascertain the existence of certain defects that absolutely disqualify when concealed, as they effectually may be, and sometimes are, by incrustations of filth a month old."

A well-defined system of examination should always be followed, which may well begin with the sight and hearing; "for one often finds it a waste of time and patience to go through a long examination only to learn at the end that there is some disqualifying condition of one or the other sense." The hearing of each ear and the sight of each eye is tested separately, and not until after the satisfactory completion of this examination does the candidate remove his clothing. While undressing it has been suggested that he should be narrowly watched, for at this time he is apt to be off his guard, and a defect which he is desirous to conceal may then be detected, or the absence of a disability which he may subsequently feign, noted.

The height, weight, and chest measurements are next taken. Between these there is an average proportion, which in a man fit for active service will admit of slight variations without indicating a departure from health; a deviation of a fraction of an inch or a few pounds from the standard in any particular case may be disregarded "if the applicant is otherwise in good health."

In all armies there is a minimum standard of height and weight at which recruits may be accepted, varying in different countries, and in the same country under different conditions.

When an army has ample material from which to select its recruits, a certain height may well be insisted upon; but otherwise or in war, when, says Keefer, "brains, eyes and hands are demanded to direct the gun and pull the trigger, a lower figure may well be taken, especially since a short, stocky man is usually possessed of greater endurance than a very tall one."

The circumference of the chest, maximum and minimum, should be measured immediately over or below the nipples, thus excluding the pectoral muscles. "The examiner must carefully scrutinize the body surface for the detection of any obvious defects, such as skin disease, varicose veins, spinal curvature, etc., which being concluded, the various parts are examined in detail. The cranium is felt; the eyes, ears, nose, mouth and throat critically viewed; the heart and lungs examined by the usual methods of inspection palpation, percussion and auscultation; and the abdomen is gone over systematically. The presence or absence of venereal diseases, testicular abnormalities, hernia and hemorrhoids is next ascertained. The recruit is then put through a vigorous gymnastic exercise, which is designed to show the power of his muscles and the mobility of his articulations. While cardiac and respiratory action is still excited, by reason of the exercises just finished, the heart and lungs should again be auscultated. Finally, the examination is con-

² The order of examination of a recruit laid down in "Greenless" Epitome" the official guide, concludes with the special senses; of a cadet, it begins with them.



cluded by testing the color perception; after which, the accepted recruit is vaccinated.

"Upon the completion of the examination, an 'outline figure card' is made out. On this card, bearing an outline of the human figure, front and rear, every mark which will serve to identify a deserter, or prevent re-enlistment of the dishonorably discharged, is accurately described and located."

Each peculiarity or deviation from the standard is to be noted on the enlistment papers; for even though it be considered not disqualifying at the time of examination, it may become so later, in which event it will almost certainly be made the basis of a claim for pension.

The importance of the physical examination of recruits for the national guard, has recently been recognized by our State military authorities; and to-day, in the best organizations, physical examination is compulsory.

Since then, so much particularity is required for admission into the service, how are unfit and disabled men, for such there always are, gotten rid of when once enlisted?

Soldiers are discharged by reason of expiration of term of enlistment; by purchase after one year's service; on their own application after twenty years' service; by civil authority, under certain peculiar conditions; by sentence of a court-martial; by order of the war department; or upon surgeon's certificate of disability. The giving of a certificate of disability, it is needless to remark, demands a full appreciation of the meaning of the words, "I hereby certify." From April, 1861, to May, 1863, the aggregate of discharges on surgeon's certificates, reached the enormous number of nearly 200,000. The possibilities of this function of a medical officer illustrates the necessity for a conscientious performance of this important duty. As has already been stated, the medical officer's first duty is to his country, whose servant he is: his second duty is to the soldier.

Before giving a certificate for discharge, the officer must decide (1) if there be any disability, (2) if it is permanent, (3) if it is actually disabling, (4) if it is incident to service and in the line of duty.

"Malingering" is a disease very common in active armies, and not unusual in our own to-day. No factor has been more influential in producing this result than the ease with which pensions have been obtained, for every man discharged on surgeon's certificate of disability at once becomes a claimant. The certificate must be made upon a printed form furnished by the adjutant-general of the army (no written form being accepted). It contains (1) the name of the soldier, the military organization to which he belongs, date of enlistment, etc.; (2) a statement of his immediate commander as to the circumstances counected with the acquirement of the disability, and his opinion as to its being incident to service; (3) a certificate of the medical officer, giving in his own handwriting, the nature of the disability, his opinion as to its origin, and its incidence to the service, and the extent to which it incapacitates the man for earning a living. The certificate is made out in duplicate, and forwarded through military channels to the general officer commanding, who, after approval by his medical director, orders the man discharged.

Among the numerous other duties of a medical officer is that of the sanitary supervision of the person-

nel, habitations, and surroundings of the command to which he is attached, and the recommendation of such measures as he may deem necessary to prevent or diminish disease among troops. "For this purpose," as the regulations have it, "he shall examine and note in the medical history of the post, at least once a month, the sanitary condition of all buildings, the drainage, and the amount and quality of the watersupply, the clothing and habits of the men, the character and cooking of the rations, and shall, immediately after such examination, make a report thereof in writing to the commanding officer, with such recommenda-tions as he may deem proper. The commanding officer shall return the report with his views thereon, and if he deem the action recommended impracticable or undesirable, he will state fully his objections. endorsement shall be recorded in the medical history of the post, and a copy of the report and endorsement shall be forwarded by the medical officer through military channels to the surgeon-general." The importance of a proper performance of this duty cannot be overestimated, for upon it, in large measure, depends the physical well-being of the command. Particularly is it so in the field among raw levies, who have no knowledge of how to properly care and provide for themselves.

The duties of a military medical officer are performed under extremely varying conditions. His life in garrison during times of peace is simply a preparation for his life under the normal conditions of an army, in war; for, of course, the only reason for the existence of an army is the possibility of war. So far then as possible, the daily routine at a post is an endless rehearsal of those things which would be done in active service.

The management of a post hospital, which, with one exception, is the only class of military hospitals now existent in our service, should be as far as possible exactly like the management of the great general hospitals which will spring up in the event of war. The hospital is subdivided for convenience of administration into different departments, as dispensary, operating-room, wards, kitchen, etc., each of which is presided over by a designated individual, who is made responsible for the proper management of his department. For the most part, in their interior economy stationary military hospitals are managed as are those in civil life; certain details are necessarily different, but the general result is identical. Both must be highly disciplined organizations to be efficient ones.

In addition to the duties which pertain more particularly to his own department, the medical officer has much to do with official matters non-medical. He often serves on court-martial and board duty. He is by law a member of all boards for the admission of officers into the service, whether from civil life directly or from the military academy; of all boards for the promotion of officers and for their retirement. In fact, he has a finger in almost every official pie.

The necessity for a trained body of sanitary soldiers working under the immediate direction of the medical officer has been recognized by military sanitarians for a hundred years, and more or less efficient organizations of this character have existed in some or other armies for that time. The public appreciation of their value is directly proportionate to the amount of active service done by the army.

(To be continued.)

Original Articles.

DEATH SUPPOSED TO HAVE BEEN CAUSED BY VIOLENCE.1

BY Z. B. ADAMS, M.D., OF FRAMINGHAM.

"But is this law? Ay! marry is it; Crowner's quest law."

THE following is copied from the Record-book of a medical examiner:

"The weather was cool. Attention was called to the house by the bad odor issuing from it. At 9.15 A. M., May 28th, I entered the room, which had been closely shut. The body was found lying upon the left side in bed. Wherever exposed, it was completely covered with huge white maggots. The surface was black from decomposition. The eyeballs had burst, and the belly was inflated with gasses. The skin fell off wherever touched, and the odor was fearful. It seems incredible that all this could have taken place in the short space of 86 hours, in cool weather, and the entrance of flies prevented by closely shut doors and windows. A considerable sum of money was found under his pillow. No suspicion of foul play could be entertained."

Certainly this was a disagreeable case; but the duty of the examiner was absolutely repulsive when he was obliged to sign a printed "return of view" stating that "the death was supposed to have been caused by violence."

And perhaps more disagreeable still would have been the experience, if, as in the case cited by Medical Examiner Seymour, of Hampshire County, another medical examiner and an attorney, consulted in regard to the matter, had pronounced the action of the medical examiner in returning a "view" as being unwarranted, and apparently the county commissioners had coincided in this opinion.

The chief ground of complaint against the language of law is found in its redundancy. To secure precision and avoid ambiguity the writers of our laws strive, whether by amplyfying, restricting, or otherwise defining the meaning, to remove all chance of equivocation. Thus the statutes are overburdened with verbiage. But in the law relating to medical examiners (a law, be it remembered, the aim of which is to discover homicide, to protect the innocent and punish the guilty of the heinous crime of murder), and in the most vital point of this law, is introduced a phrase so loosely drawn, so vague and unprecise, that scarcely two intelligent men can be found who will agree upon its meaning. One might even be permitted to infer that in drafting Section 10 of Chapter xxvi, it was intended to imply that medicine being confessedly an inexact science legal phraseology applied to medical questions should be likewise inexact.

"The phrase 'supposed to have come to his death by violence," says Dr. Mead in his excellent paper read before this Society in June last,2 "is very indefinite and elastic; it wisely leaves the medical examiner's field unfenced and uncircumscribed. It does not say upon whose supposition the examiner may act, nor does it limit his action to those cases which are known to be due to violence; in fact, he is to decide this very point by his examination."

¹ Read before the Massachusetts Medico-Legal Society, October 3, 1894. 2 See Journal of October 12, 1894.

This is admirably stated. Still every medical examiner must experience a cold shudder of disapproval when called upon to state, in a plain case of death from natural causes, that "death was supposed to be caused by violence.'

The first and obvious meaning of death by violence is death caused by the hand of another. Clearly this excludes suicide and accident, whereas deaths from these two causes constitute the bulk of cases of violent death which the medical examiner is called upon to "view." No one can doubt that these are proper cases to view. This, then, cannot be the true definition of

the words of the statute.

But violence may mean any injury which happens to the body from without. Neither can this be the meaning of the statute; for such a definition omits cases of sudden death from natural causes which the medical examiner, as I will show further on, is very properly called upon to view. These are cases of unexpected or unexplained death, where either no physician was in attendance, or the cause of death seems obscure and perhaps liable to suspicion. To quote Dr. Mead's language upon this point, "Suspicions are aroused by the suddenness and unnaturalness of the death . . . different from the usual form of natural death with which every one is more or less familiar." The conclusion of the bystander "being either that it was a violent and unnatural death, or was caused by some natural agency with which he was unacquainted."

Some cases of death from natural causes may by a forced construction be placed under accidental or violent deaths. Such, for examples, are rupture of aneurism from muscular effort, fatal hemoptysis in phthisis from violent exercise, a perforation caused by vomiting in ulcer of the stomach, disease of the heart ending in sudden death while straining at stool, etc., but such accident or violence cannot have been contemplated in a statute devised to detect and punish the crime of homicide. There are cases occasionally where there is evidence to show that death resulted from natural causes when in matter of fact it was due to gross violence. In a case of sudden death where every evidence was at hand to prove the existence of disease of the heart, an unsuspected fracture of the frontal bone was found, caused by a fall. Again an infant was buried without a certificate, the undertaker being satisfied by representation made by the family that death was due to convulsious, when the autopsy, three weeks afterwards, revealed a fracture of the skull the result of the brutal carelessness of its drunken father.

But such cases of violence or homicide do not sufficiently show the value of the present form of the statute. One of its undoubted objects is to detect crime where slow or subtle poisons, or some unusual methods are employed, which produce a fatal result with symptoms similar to those of natural death; and another purpose is to detect and punish the abortionist. Of the first class we have a fine object-lesson in the well-known case of Mrs. Robinson. Of the second class, is the case recited by Dr. Durell at our last meeting,* where, on the representation of a doctor, he was on the point of issuing a certificate of death from natural causes, when accident revealed the fact that a crime had been committed.

Dr. Mead says, "The office of medical examiner was created to render the detection and punishment of crime more certain and effectual"; and we may add

^{*} See Journal of April 19, 1894.

that it is precisely in these cases of secret or concealed homicide that the medical examiner may render the greatest service to the community.

A prejudice in favor of an individual, or what is called "popularity," may screen a cunning criminal, as, on the other hand, malevolence may bring suspicion upon the innocent; indeed in cases of sudden or unexpected death it is not safe to leave the question of the cause to the decision of the family, the police, the board of health, nor even of the doctor. There is a distinct advantage in an inquiry of this kind in calling upon a stranger, as it were an indifferent spectator, to whom all the facts are submitted anew, who can view the case from a new standpoint, whose sympathies and interests are in no way involved, and who, moreover, by special training and experience is competent to decide upon the testimony.

It is claimed that the law has worked well. How can that be shown when, on the one hand, we have no means of knowing how many cases of secret homicide may have escaped detection under the guise of death from natural causes; nor, on the other, how often a groundless suspicion may remain in the minds of the community against an innocent person?

It is to be regretted that no statutory provision exists authorizing the medical examiner to make postmortems at his discretion in cases of unexplained death.

Both the State and the medical examiner would be the gainers by such legislation. In case a secret homicide should be revealed in this manner, the value of the law in its widest possible interpretation would be proved, while the medical examiner would have no difficulty in recovering payment for his labor; whereas if, as no doubt would happen most frequently, no crime was brought to light, not only might a cruel suspicion be removed from some innocent person, but much knowledge would be gained upon doubtful questions connected with sudden death, while mortuary statistics so far as they are based upon medical examiners' certificates would possess far greater value than now.

I would suggest that Section 10, of Chapter 26, of the Public Statutes might be amended acceptably as follows:

Medical examiners shall make a view of the dead bodies of such persons only as are supposed to have come to their death by violence; or, when called upon, when the death is sudden or the cause of death is unknown; in which case they are hereby authorized to make a post-mortem at their discretion, such post-mortem not to be returned as a medicolegal autopsy.

I append to my paper the following from a member of this Society:

August 23, 1894.

DEAR DR. ADAMS: — I am a little shy about trying my hand at tinkering statutes, and that is why I haven't replied sooner to your earlier request.

I am not thoroughly convinced that it is desirable to amend the law. While I am in favor of the widest and most liberal latitude in the discretion under which medical examiners act, and while I believe (as I have always acted), that a medical examiner should not inquire closely into the character of the "notice" by which he is summoned, but should presume that in the mind of the one summoning him there is a good reason for the summons, I do think that the clause "such persons only as are supposed to have come to their death by violence" is a useful clause sometimes as a bar to frivolous calls and to calls clearly outside

the function of the medical examiner, considered theoret-

ically.

If I were commissioned to formulate statutory provisions which would conform closely to my own practice during the past seventeen years as a medical examiner, my suggestion would take this shape:

(1) Omit Section 10 of the present law altogether.
(2) Amend Section 11 by omitting the words "who is supposed to have come to his death by violence" and substitute therefor the words "into the cause and manner of whose death a medical inquiry is deemed necessary," so that the first part of the Section 11 would read: "When a medical examiner has notice that there has been found, or is lying within his county, the dead body of a person into the cause and manner of whose death a medical inquiry is deemed necessary, he shall forthwith repair, etc."

This change would sufficiently enlarge the medical examiner's jurisdiction to include all possible emergencies, without, in my belief, opening the door to abuse. It would take off the implied inhibition which now hampers some of our best examiners; and it would express what is really the practice of others of our leading men.

The only question in my mind is whether a change is either necessary or expedient. Personally, I am not ham-pered by the present statute, for I go whenever and wherever I am called within my district, always assuming, in the absence of information to the contrary immediately available, that a medical inquiry into the cause and manner of the reported death is deemed necessary. And I feel sure that the same "discretion" in the way of executing this statute would be approved, whoever the examiner was. In this matter, I think Dr. Mead's position is correct, although a strict interpretation of the law is clearly against it; but, on the other hand, if a strict interpretation of the law is insisted on, and every medical examiner before he answers a call, must run around the country hunting for that "supposition" of "violence" in the case, as a condition precedent to his official action, he and his law will become absurd. As I see things now, I don't very much care whether the door of opportunity for action under the statute is opened more widely, and I shall keep on answering calls, as I have done in the past, without a preliminary cross-examination of the motives of the person who does the act of calling me. In other words, I think we may say of the medical examiner, when he is summoned to a case:

His not to reason why; His not to make reply; His but to get there, spry!

and take charge of the body.

Yours very truly.

WAS IT MURDER OR SUICIDE?1

BY E. P. HURD, M.D., OF NEWBURYPORT, MASS., Medical Examiner, Third Essex District.

On the morning of July 28, 1894, an empty boat was seen on the flats near Carr Island, opposite Jefferson Street, Newburyport. Its oars and anchor were missing. In the bottom of the boat, lying loose, were two boards which had served as seats. A straw hat, evidently the property of an adult man, was the only other thing which was found aboard. The boat was subsequently identified as the property of a resident of Amesbury who had left it at Black Rocks near the mouth of the Merrimac the day before. The oars and sail had been removed by him and locked up ashore. When the owner recovered his boat, he found, as before mentioned, that the anchor and about seven feet of rope were missing. On the morning of the 28th of July, as two fishermen of the South End were going to their clam-beds, they saw in shallow water, the tide

1 Read before the Massachusetts Medico-Legal Society, October 8,

being low, the back of a man protruding above the surface of the water. This was at the edge of Hook's Channel, and the place where the body was discovered is nearly dry at low tide. They rowed up to the body, and found around its neck a rope about seven feet long attached to which was a boat anchor, weighing about nine pounds. The anchor was embedded in the mud, but had not caught. The body was lying with the face downward and had evidently been in the water several days, being badly swollen and discolored. The fishermen took the anchor into their boat and towed the body to one of the lower landings, where it was examined by me.

On the person of the dead man were two dime novels, which suggested an expectation of some leisure time, and papers which proved beyond doubt that he was C. F. A., of Haverhill, and also that he was a printer by trade. The body was that of a very large man, five feet ten inches high, weighing about 180 pounds. He was well dressed in a light-gray summer suit and a new pair of laced boots. No hat, no purse, no money, no watch, was on his person.

The remains were in a state of rapidly advancing The face was swollen and the features distorted. A frothy, sanious fluid ran from the mouth. The epidermis was livid, in spots green. The veins of the face and temples were engorged. The abdomen was enormously swollen (cadaveric tympanites); the thorax was livid, greenish, the epidermis in places peeling. A tight rope, with anchor attached, was around the neck; the knot was at the back part of the neck, and examination proved it to be a slip-noose. The knot seemed to be drawn very tight; there was a deep, wide crease around the neck where the rope had constricted the parts. Above and below this crease, the integument was swollen and overlapped. The knot seemed to me drawn tighter than any man could have drawn it himself with his hands above his head, pulling upwards; it was tight enough certainly to produce strangulation. I may say, however, that the deceased was a large muscular man, that a strong, nervous pull on the slip-noose thus adjusted would draw it pretty tight; and it is a perfectly defensible proposition that any strong man could thus inflict dangerous strangulation upon himself if he were disposed. It is the improbable that often happens.

There were no marks of violence on the person of the deceased other than those inflicted by the rope around his neck; no wounds, contusions, or fractures. A post-mortem examination subsequently made certainly favored the hypothesis of death by strangulation. There was no water in the lungs or stomach, nor in the The right side of the heart was displeural cavities. tended by dark blood; the left side was empty. The lungs were collapsed. Their bases were engorged with dark blood; the upper portions crepitated well on pressure. On section a frothy, sanious fluid exuded; the same fluid was found in the bronchi. There was intense lividity and swelling of the face, lips, hands, eyelids and scalp, with dark veins very prominent; the eyes were red and protruding, the tongue swollen and protruding. The mark of the rope around the neck, four days after the discovery of the body, was very pronounced. The brain, on account of the advanced decomposition, was not examined.

The epidermis of the feet and legs was of a livid, greenish color, and was macerated owing to long lying been lassoed, as the Thugs strangle their victims; he

was oozing in places, as on the thorax, owing to cracks in the skin.

The day of its discovery, the body was identified by the guardian and by a sister as belonging to C. F. A., of Haverhill, a young man twenty years of age, who had left home on the morning of the 19th, and had not since been heard from. Careful examination revealed the fact that young A. was of dissipated This opinion I had previously formed by a perusal of a diary found in his possession. kept very low company; had had intimate relations with a certain disreputable female, and there was infatuation and deep jealousy. This fact I learned of the chief of police. For several days prior to his disappearance, he had acted strangely; had been moody, dejected, and had been heard to say that he wished himself dead. There had been a quarrel with his

A. never carried much money on his person; in fact, he was earning but moderate wages at his trade. There was no means of knowing how much money he had when he left home on the 18th or 19th of July, but the amount could not have been large. guardian stated that A. had drawn on him the day before his disappearance for ten dollars. What became of the sum, the detective who undertook to work up the case was unable to determine. Certain it was, that there was no pocket-book and no money on A.'s person when found on the morning of the 28th.

The owner of the boat found it on the morning of the 20th at Carr Island, as before stated. and anchor found around the neck of A. were identified as belonging to the boat. The hat was A.'s hat. The boat had been anchored the day before at Black Rocks, near the mouth of the river. The sail and oars had been removed so that the boat might not be

We are now able to reconstruct a portion of this A. had wandered away from Haverhill on or about the 19th of July, and found himself at Black Rocks, a little retired landing, with about four houses a little distance from the water's edge. The presumption is that he came down in the electric-car. He was seen by no one on the way; no one remembers to have seen him from the time he left Haverhill till he He was observed at Black arrived at Black Rocks. Rocks on the evening of the 19th by two rather suepicious characters, one of whom has served a short sentence in jail; this is according to the testimony of these parties, elicited by a detective. Yet these men deny having had any conversation with A. impossible to find a shred of evidence to connect either of them with the disappearance of A., though some hope was at first entertained by the detectives that a clue might be found here.

How did A. get to Hook's Channel where his body was found? That boat moored by its owner at the Black Rocks' landing, must have borne the body of A. on the night of the 19th to the place near Hook's Channel where it was found on the morning of the 28th. Did it bear him alive, or did it bear him a corpse? This is the question that is still unsolved.

One theory, entertained by many, is that A. was the victim of a foul murder. At Black Rocks he fell in with one or more desperadoes who, for money, or from some other motive, murdered him. He may have The blood was everywhere fluid, and was then robbed of what little money he had. The

murderers found that they had a corpse to get rid of; there was only one boat there (as was the fact) and this boat was without oars. However, there was no other means of covering up their guilt; they hastily, under cover of the darkness, threw the body into the boat and paddled up the river with the seats of the boat (there were two of them) for oars. The tide was then setting strongly toward Newburyport; and if the boat had been left to the action of the tide alone, it would not have drifted out to where it was found, namely, at Hook's Channel. This is absolutely certain if we can rely on the testimony of all competent boatmen. Consequently, to reach Hook's Channel, the boat must have been paddled considerably out of the current. There was doubtless a good reason why the murderers of A. (if this deed were really a homicide) preferred to row out of the main current - they would thus avoid any small boats which might be passing up or down the river. Hook's Channel was some distance to the left of the main current and boatmen would naturally keep away from that quarter, especially as it was shallow water in that direction. The theory then is that the supposed murderers, after paddling the boat with their dead body out to Hook's Channel, dumped the body overboard, first taking the precaution, by tying the anchor-rope about his neck with the anchor attached, that the body should never rise to the surface and tell of their crime. There is nothing inherently improbable in the supposition that this same rope was the instrument by which the murderous deed was accomplished in the first place. In favor of the theory of murder is the fact that the deceased when found had no knife in his possession with which the anchorrope could have been cut. Detective Hammond, however, makes light of this objection, for he has ascertained that A. was in the habit of carrying a pocket-knife with a large blade; this he might have flung into the river after cutting the rope. Another fact in favor of the murder theory is the absence of any money on the person of A. when found.

The subsequent course of our supposed murderers is easily imagined. They paddled their boats over to the Newburyport side, landing on Joppa Flats, then left it there and went their way unobserved and unsuspected. If they imagined that the place where they dumped their victim was deep water, subsequent de-

velopments revealed their mistake.

As for the boat, it might readily drift on the ascending tide from the place where it was left, to Carr Island, the other side of the river. This is conceded by the boatmen of Joppa and by others well acquainted with the river. On asking several of the river boatmen whether an empty boat which had been abandoned at Hook's Channel, where the dead body was found, would naturally float on the tide to Carr Island, I could not find one who believed that a boat would be likely to drift in that direction, but all admitted that the course of such a boat would depend somewhat on the wind. It does not seem to me improbable that a boat might drift with the tide from that locality to Carr Island.

Against the homicide theory are (1) the want of any known motive for the murder; (2) the absence of any marks of violence on the person of the dead man other than those caused by the rope; (3) the absence of any clue to the murderer. Moreover, in favor of the suicide theory are the following considerations: (1) The testimony of A.'s employer and of his of annual injections required is not stated.

friends that he had been acting strangely, had been moody and taciturn; (2) that he seemed to have "skulked" away to Black Rocks (fifteen miles), not mingling with any company, and keeping his plans to himself; (3) the place where the Amesbury man's boat was left moored was a retired place — and a man who was meditating suicide would naturally seek such a place. In brief, we can easily imagine such a succession of events as these: In a state of melancholy, perhaps even of mental aberration, A. strays to Black Rocks. He is meditating suicide, and finds the boat. The tide is flowing upward; he raises the anchor, and enters the boat. He is soon out in the midst of the current, drifting upward towards Newburyport. He shrinks from meeting other boats or being seen; he is determined to bury himself from all eyes and to do it so effectually that no one will ever know what has become of him. Especially is the thought gratifying to him that she who has caused him so many woes, whom he has so adored, but who has been false to him - that she will wonder what has become of him, will miss him, will perhaps some time long for him, but will never, never know his The tide carries him towards Newburyport; he seizes the board on which he had been sitting and sculls to the left. There is a broad plain of ebbing waters in the direction of the clam-flats; it is quiet and retired out there; the water seems deep; here is a good place to carry out the cherished design. Choosing what he thought a suitable place, he is about to cast himself overboard, when he remembers that he has heard that after a certain time bodies rise to the This thought is abhorrent to him; he wishes to make his fate forever a mystery. He looks around for a weight; he sees the anchor, cuts the rope, throwing away the knife which he will never need again; he may have done the same thing by his pocketbook. It is the work of only a few moments to adjust the slip-noose to his neck; in his frenzy he gives a strong, impetuous tug with both hands on the rope, which, with the anchor, is now at arm's length above his head, and falls overboard. The anchor drags him to the bottom; the constriction of the gullet and windpipe by the rope precludes the entrance of water into the lungs and stomach, and fatal asphyxia soon sets in.

On the whole, I think the hypothesis of homicide the more probable. My first impression when I saw that man on the wharf with the noose so tightly drawn around his neck - This must have been murder - will probably yet be verified, if the old adage, "Murder will out" be true. Had A. designed to commit suicide he would have been satisfied with attaching the anchor rather loosely to his person, the object being only to keep the body from rising. Then again, the postmortem findings certainly favored the hypothesis of death by strangulation rather than by drowning. And yet I am aware that persons have died from drowning without swallowing a drop of water, owing to sudden constriction and closure of the glottis. There are, I believe, no absolutely reliable pathognomonic signs of

death from drowning.

PROLONGED TREATMENT OF FECAL ACCUMULA-TION .- A writer in a medical journal describes a case in which a fecal accumulation was made to disappear by an injection of glycerine per annum. The number



Clinical Department.

A CASE OF PERITYPHLITIC ABSCESS IN A CHILD FOUR YEARS OLD IN WHICH THE APPENDIX WAS NOT THE CAUSE OF THE ABSCESS: RECOVERY.

BY JOHN HOMANS, M.D., Surgeon to the Massachusetts General Hospital, etc.

DOROTHY D., aged four years, a healthy child, but habitually constipated, of a nervous temperament and inclined to nausea and vomiting, became feverish on December 28, 1892, and complained of a pain in the abdomen in the region of the umbilicus and to the right of it. When first seen by her physician, Dr. Thomas Dwight, on December 30th, her temperature was 103° and her pulse 120. A small dose of mor-

phia was given and a cathartic.

On December 31st, the child was rather worse - restless, painful night, no movement of bowels. Pain at the same point, which was rather dull on percussion, and suggested a tumor. I saw the case in consultation with Professor Dwight at about noon on Saturday, the 31st. It was evident that there was obstruction of the bowels, but whether from local peritonitis or something mechanical, I could not determine. There was considerable distention and tenderness, most marked in the umbilico-pubic region. I decided to watch the child closely, and open the abdomen if it seemed best. Dr. Rotch saw the case on Sunday, the 1st of January, 1893. It was decided at the consultation to give a cathartic once more, and castor oil was decided upon.

On January 2d there had been a very slight action from the oil, but the little patient was somewhat nauseated. There was a tumor in the lower and right umbilical region the size of an egg. The child seemed weaker, and had taken no nourishment to speak of since December 28th. The pulse had continued at 120 per minute. I determined to open the abdomen, and did so on January 2d. An incision was made, two and one-half inches long, between the umbilicus Before the peritoneum was opened, the and pubes. bladder, which rose to the umbilicus and ought to have been emptied by catheterization, was punctured and the very minute hole was sewed up with fine black silk. The bladder was at the same time emptied by a catheter in the urethra. On opening the peritoneum the healthy bowels were seen and on separating them towards the right of the umbilical region, a level surface of grayish color came into view. On this surface, which was the roof of an abscess, lay the appendix. It looked like a little earth-worm and was slightly pinkish in color. It was not adherent, and was about two and a half inches long. I lifted it up and carefully examined it. It appeared perfectly normal and I laid it down again. A minute opening in the roof of the abscess gave spontaneous exit to a stream of pus the size of the smallest needle. This opening was enlarged, after the intestines had been protected by gauze, and about two ounces of rather thick and offensive pus ran out. The abscess cavity, and the peritoneal cavity in the neighborhood, was thoroughly douched with warm water. A small glass tube with some gauze around it was put in the abscess cavity, and the wound was sewed up around it. The appendix was not removed. The temperature at 8 P. M. was 98° and the pulse 140. A catheter was kept in the bladder.

Stimulants, milk and eggs were given. There was considerable serous discharge from the drainage-tube. The bowels moved on the fourth day, and at this time the tube and gauze were removed. The catheter was removed from the bladder, and the urine was drawn every four hours.

The discharge became slight on the seventh day, and soon ceased. The wound was entirely healed on the fifteenth day, and the patient was walking about on

the seventeenth.

She has been perfectly robust and well since. Two years have now passed, and her constipation has been less than before the operation. The fact that the appendix was not at fault - was neither constricted, swollen, gaugrenous, nor perforated — and that yet there was the usual abscess we find in cases of appendicitis, leads me to think the case worth reporting. Perhaps as the appendix was not affected in this in-I have no exstance, it may not be in some others. planation to offer for the formation of the abscess. Except for the youth of the patient and the fact that the appendix was normal and sound, the case does not differ from other cases that we call appendicitis when we operate on them and do not happen to see the appendix.

HYDRAMNION WITH HYDROCEPHALUS, RE-QUIRING CRANIOTOMY.1

BY THOMAS E. CUNNINGHAM, M.D., CAMBRIDGE, MASS.

EXCESSIVE accumulation of liquor amnii constitutes the condition known as hydramnion. The usual causes are found in disease of the uterine membranes or fetus. The amount of fluid present differs greatly, and depends on the different degrees of the affection and somewhat on the particular cause. In by far the larger number of cases the amniotic fluid is so little in excess of the normal amount that a diagnosis is not made or if it is, only at a late period, at the moment of delivery. In another class there is more fluid, which appears rapidly; and owing to excessive distention the uterus will be very liable to take on contractions, these leading to premature rupture of the membranes and expulsion of the fetus. There is another class of cases I wish to call your special attention to, a more pronounced type, but by no means the worst. The exaggerated form I have never seen. variety of hydramnion has been mistaken for ascites and ovarian cyst, and treated by tapping with fatal results. Kidd treated one case in this way, thinking he had an ovarian cyst complicating pregnancy, and afterwards delivered the woman of twins. This condition is very unfavorable for the child, a large number being born dead, or dying shortly after birth. Owing to the exaggerated distention, uterine inertia is apt to follow, with all the dangers and horrors of post-partum hemorrhage. It behooves us to be keenly alive to the many accidents that may happen while conducting a case of this kind.

Having made a diagnosis is one thing, treating it is yet another. Various views have been advanced as to the proper procedure when once intervention is decided upon. The concensus of opinion, however, seems to favor the puncture of the sac in the interval of the pains. If done during a contraction there is great danger of syncope, the waters rush out with such

¹ Read before the Cambridge Society for Medical Improvement.

force, rapidly decreasing the inter-abdominal pressure. In my case, although the distention was enormous and the diaphragm forced upward, the patient was in a good condition, well nourished and free from edema; and there were none of these evils to combat.

The following is a brief account of the case: Mrs. Alice W., born in Newfoundland, age thirty-six years, has a sound family history. She has been twice married, has had thirteen pregnancies, four miscarriages, eight normal births, and one abnormal (the subject of the present paper).

During the latter part of August, 1893, she had her last menstruction. Some time in October a bloody discharge appeared from the uterus; and as it continued off and on for five or six weeks, she imagined another miscarriage had taken place. In January, however, she "felt life" and thought herself somewhat larger than usual. Every week after this the abdominal distention added to her discomfort, until finally she complained of tightness and distress, with broken and imperfect sleep. In every other respect, however, she enjoyed the best of health; her appetite was good, bowels regular, and circulation perfect, as shown by absence of edema of extremities all through her pregnancy.

On the 16th of May, unable to endure her agony longer, she sent for me. I found her sitting on a chair, the abdomen enormously distended, and complaining of great distress. For a whole week she had not been able to lie down, and to add to her misery labor pains were coming on. My first thought was that an ovarian cyst was present, but on examination a correct diagnosis was readily made. Treatment expectant. The following morning found no change; delay counseled. In the evening was sent for again, and the distress being so great it was decided to rupture the membranes. As the os was one-third dilated and the membranes somewhat tense, this was easily accomplished. I do not know how much liquor amnii escaped, but it was a large amount and in much less time than it takes me to tell it. I was afterwards able to collect three-fourths of a pailful, which in appearance was perfectly normal. To describe the relief that followed this very simple procedure is beyoud my very limited powers.

The patient was now left for the night with the instructions that if strong labor pains set in to send for me. About 4 A.M., six hours after rupturing the membranes, I was again called. The pains were not strong and the examination per vaginum was anything but satisfactory. It was thought a head presentation existed at the previous visit, but now it appeared more like a breech. Ether had to be given to settle the question, and with this in view my brother, Dr. Joseph Cunningham, was called to my assistance. It was then determined that the presenting mass was a hydrocephalic head and that the child was dead. Forceps were applied; but as they slipped, owing to the compressibility of the child's head, they soon had to be abandoned. My craniotomy instruments were then obtained, and, reinforced by the assistance of Drs. Clarke and Tuttle, the head was perforated with Smelly's scissors, under due antiseptic precautions, and the child delivered by the aid of the cephalotribe. The patient made a complete and uneventual recovery.

DURING the recent cholera epidemic in St. Petersburg there were 3,713 cases, 2,043 being fatal.

Medical Progress.

REPORT ON THERAPEUTICS.

BY FRANCIS H. WILLIAMS, M.D.

ANTITOXIN IN DIPHTHERIA.

[My last report on therapeutics (May 31, 1894) included the abstract of an article by Ehrlich, Kassell and Wassermann on the use of antitoxin in diphtheria. Since that time the articles which have been published on this subject would fill the JOURNAL many times; but I have chosen from these one, by a distinguished French observer, to present the views recently expressed. Antitoxin has as yet been little used in this country; but from the Continent, where it has been employed in large numbers of cases, we have very favorable reports. My own experience includes thus far only a few cases. It is probable that the antitoxin will find its chief usefulness in the early rather than in the late stages of the disease. There are three makes of antitoxin, Behring's, Aronson's and Roux's. The latter has not reached this country yet so far as I I am aware. Behring's solution is made in three strengths, No. 3 being two and a half times as strong as No. 1. His solutions will keep several months if put in a cool, dark place. For making the injections Behring recommends the use of a Koch's syringe which will hold ten cubic centimetres. The injection should be made where the skin is loose, as on the chest or thigh, and not upon parts of the body where the patient would lie. Scrupulous care should be taken to have the syringe perfectly clean, and the skin should be carefully cleansed at the place where the injection is to be made. F. H. W.]

THE SERUM THERAPEUTICS OF DIPHTHERIA.1

Prof. E. Roux, chef de service of the Institut Pasteur, and president of the French Committee for the study of diphtheria, in a communication to the Eighth International Congress of Hygiene and Demography (Budapest, September, 1894), states that diphtheria is a localized affection. Since 1891, with the collaboration of L. Martin and A. Chaillou, he has followed up the experiments of the treatment of diphtheria by antitoxin serum, first upon animals and subsequently upon children, and can now say that their results confirm essentially those of Behring and his co-workers in the treatment by antitoxin, both of animals and of children affected with diphtheria. The animals furnishing the antitoxin serum are rendered immune against diphtheria — that is to say, they are accustomed to the toxin of diphtheria. The most rapid process for obtaining the toxin consists in making the culture in a current of moist air. Vessels with flat bottoms and with lateral tubes are used; into these is poured an alkaline bouillon peptonized to two per cent., the liquid being spread in a thin layer. After sterilization, recent and very virulent diphtheria bacilli are added, and the temperature of the chamber is raised to 37° C. When the development has fully begun, the current of air that passes into the neck of each of the phials is regulated, after bubbling through a washbottle. After three weeks, or at most a month, the culture is sufficiently strong for use. The completed cultures are filtered through a Chamberland bougie, and the clear liquid is kept in well-filled vessels,

¹ The Lancet, September 22, 1894.



corked, and sheltered from light, at the ordinary temperature. Prepared in this manner, a dose of onetenth of a cubic centimetre of the toxin generally kills a guinea-pig weighing 500 grammes in from forty-eight to sixty hours. It finally loses its activity, but only slowly if properly kept under the conditions mentioned.

In order to treat children ill with diphtheria, large quantities of serum must be available; therefore it is desirable to immunize large animals capable of furnishing abundance of antitoxin. In conjunction with M. Nocard horses were immunized, because the serum of the horse, even in considerable doses, is not injurious to animals or man. It is also easy to draw from the jugular vein of the horse large quantities of blood from which a perfectly limpid serum separates out. The pure toxin is injected under the skin, beginning with one cubic centimetre; and the quantity is progressively increased. At the end of a mouth, two or three times a week from 20 c. c. to 30 c. c. are injected at each sitting. The result is better if small and repeated doses are injected than if large doses are given at long intervals.

Before treating children with the horse serum its efficiency was tested upon animals inoculated with diphtheria upon the mucous membrane, in order to approach as near as possible to actual conditions. Female guinea-pigs are useful in these experiments, as it is easy to produce diphtheria of the vulva and vagina in them. If the serum is injected twelve, or even twentyfour hours after the development of the false membrane, the disease is arrested and the animals recover; whereas guinea-pigs not so treated die in from four to six days. Even a few hours after the injection of the serum the redness and swelling of the tissues diminish, the false membranes detach themselves, and the mucous membrane recovers with rapidity. The serum not only prevents general poisoning, but its action upon the local lesion is also most marked. The diphtheria produced in the trachea of rabbits resembles exactly the diphtheria of children. Such rabbits die in remains good, or improves, very quickly, provided the from three to five days; those receiving serum in sufficient quantity, even twelve and twenty-four hours after the injection, recover. It is much more difficult to cure rabbits inoculated in the trachea with a mixture of diphtheria bacilli and streptococci. theria associated with streptococci is the most grave form met with: in children it is the most frequent determining factor of broncho-pneumonia, and the same holds good among rabbits. Still the serum is efficient in these cases if used within the first twelve hours, and given repeatedly at intervals in strong doses. rabbits treated after twelve hours died, in the majority of cases, with centres of broncho-pneumonia in which were found the diphtheria bacillus associated with the streptococcus. The failure of the serum in these cases is due to the fact that it does not stimulate with sufficient energy the cells already pervaded by the products of the streptococcus. These experiments upon animals were the necessary preparation for the treatment of diphtheria in children.

February 1, 1894, these observers began to treat diphtheria cases at l'Hôpital des Enfants Malades. Several horses were well immunized, so that serum could be used in large quantities without fear of running short. In preceding years MM. Roux and Tersin, MM. Martin and Chaillou, had studied diphtheria in the same wards, and were therefore familiar with In spite of energetic intervention the disease is of the type of disease that presented itself at the hospital, longer duration, and the temperature and pulse only

and were consequently prepared to appreciate the modifications the new treatment might bring about. No selection was made in the cases, so that the gross results during the months of treatment by antitoxin may be set side by side with those previously recorded. Nothing was changed in the nursing of the patients; the local treatment remained the same (glycerine and salicylic acid, boracic acid washes). From February 1 to July 24, 1894, 300 children ill with diphtheria entered the hospital and were treated with serum; 78 of these died, a mortality of 26 per cent. The mortality in children in the same hospital prior to this was 50 per cent. All the children that entered the diphtheria ward from February 1 to July 24, 1894, were given on admission a subcutaneous injection of 20 c. c. of serum on the side of the abdomen. If the bacteriological examination showed that the patient did not have diphtheria, the injection was not repeated. One hundred and twenty-eight children affected with various forms of angina were thus treated, and in some cases the angina appeared to be relieved. If the injection is properly made into the subcutaneous cellular tissue, it is not painful, and in a few minutes the serum is ab-In diphtheritic children the first injection was sorbed. followed in twenty-four hours by another of 20 c. c. or 10 c. c.; this was generally sufficient to complete the cure. If the pulse and temperature remained high, the injection was repeated; if the temperature does not fall below 38° C. the curative effect is not complete. The mean weight of the children treated was 14 kilos and they received a little more than a thousandth part of their weight of serum. The minimum quantity of serum used was 20 c. c. and the maximum 125 c. c. During convalescence, some days after the injection of the serum, ill-defined eruptions sometimes occurred, most frequently resembling urticaria. These eruptions, unaccompanied by any fever, were due to the serum.

The principal modifications produced by the serum are as follows: The general condition of the patient treatment is not begun too late in the disease. The duration of the disease is curtailed; and the complications following diphtheria are more rare. A few paralyses only have been observed. The false membrane ceases to grow within twenty-four hours after the first injection, and detaches itself in thirty-six or fortyeight hours, at the latest by the third day; the diphtheritic bacillus disappears from the throat at the same time as the false membrane. Most frequently cultures cease to produce diphtheria bacilli from the third to the fifth day. The temperature falls promptly under the action of the serum. A single injection of serum is not sufficient to bring down the temperature of patients affected with the grave form of angina; the defervescence only begins after the second or third dose and takes place by lysis. The pulse returns to normal two or three days after the temperature. Since the use of serum the irregularities of the pulse that were formerly the rule have not been noticed. Albaminuria is less frequent and of shorter duration among diphtheritic patients treated with serum.

Angina, in which the diphtheria bacillus is associated with the streptococcus, is of graver import than pure diphtheritic angina. In these complicated cases the serum is less efficacious, and only produces good results when injected in strong and repeated doses. return slowly to normal. Broncho-pneumonia is a formidable complication, always threatening in these

cases of associated angina.

Among the 300 diphtheritic children, 169 had angina, and 120 of these pure diphtheritic angina. Of these 120, 9 died, a mortality of 7.5 per cent. If 7 children who were less than twenty-four hours in the wards are deducted, the mortality would be 1.7 per Forty-nine patients had angina associated with the streptococcus; of these 12 died, a mortality of 24.2 per cent. If 4 children who were less than twenty-four hours in the wards are deducted, the mortality would be 17.7 per cent. This same class of diphtheritic angina with streptococci showed in the same hospital, under the care of MM. Martin and Chaillou, a mortality of 87 per cent. before the use of serum. Where diphtheria extends to the larynx and tracheotomy is necessary, more abundant and more numerous injections of serum must be given. In the great majority of children the trachea and larynx rapidly clear themselves of the false membrane, and the canula can be withdrawn much earlier — on the third or fourth day after the operation. The mortality of children is caused by pseudo-membranous bronchitis, and above all by broncho-pneumonia. This is common when the diphtheria bacillus is associated with staphylococci and streptococci. Then the disease takes a rapid course, and the serum is of much less effect.

Of the 300 diphtheritic children, 121 were subjected to tracheotomy, 56 died; a mortality of 46 per During preceding years croup not treated with serum by MM. Martin and Chaillou yielded a mortality of 68 per cent. Of these 121 children, 49 had pure diphtheritic croup, with 15 deaths, a mortality of 30.9 per cent. Deducting 4 children that were less than twenty-four hours in the wards, there would be a mortality of 24.4 per cent. The cases of associated croup numbered 72, with 41 deaths, a mortality of 58.3 per cent. Deducting 10 children that were less than twenty-four hours in the wards, there would be a mortality of about 50 per cent. The mortality without serum had previously reached 80 per cent. Ten cases of croup were not operated on — there were no false membranes in the throat at entrance to the hospital. Under the influence of the serum the obstructed inspiration diminished. The children threw up the false membrane, and after two or three days

the respiration was normal. Serum should be injected and the operation of tracheotomy delayed as long as possible. Since the use of serum the number of tracheotomies has much diminished at l'Hôpital des Enfants Malades. In 1891 and 1892, 50 out of 100 children were subjected to tracheotomy; whereas, of 300 children treated with serum, 121 only were operated upon. With the use of serum tracheotomy should in the great majority of cases be replaced by intubation. It will more frequently suffice to retain the tube in the larynx twentyfour or forty-eight hours, to prevent imminent asphyxia, and to gain time until the false membranes detach themselves. Intubation is the complement of the serum treatment of the future; tracheotomy will be the exception.

For local treatment to assist the serum, all caustic and poisonous substances are absolutely proscribed. The use of a wash two or three times a day, of boracic water, or better, of water to which is added fifty grammes of "liqueur de Labarraque" per litre, is sug-

gested. The preference is given to boiled water rather than to antiseptic liquids, which cannot be swallowed without danger to children. The statistics published here would have been more favorable if better isolation had been possible. Among the 300 diphtheritic patients 85 had concurrent diseases: 33 measles, 13 scarlet fever, 6 tuberculosis, 3 whooping-cough, 3 varicella and 39 broncho-pneumonia. This last affection is especially formidable among children that have undergone tracheotomy; and those suffering from broncho-pneumonia should be isolated as well as those affected with diphtheria associated with staphylococci and streptococci. By a suitable arrangement of wards all the complications that invaded these patients might be avoided.

(To be continued.)

Reports of Societies.

MASSACHUSETTS MEDICO-LEGAL SOCIETY.

F. W. DRAPER, M.D., SECRETARY.

THE Society met October 3, 1894, fifteen members present, and the President, Dr. Z. B. Adams, in the chair.

The PRESIDENT read a paper entitled

DEATH SUPPOSED TO HAVE BEEN CAUSED BY VIOLENCE. 1

The paper presented a review of some of the limitations which the statutes impose upon the medical examiner's freedom of action, and discussed especially the interpretation of the word "violence." It was suggested by the reader that the law would be improved if medical examiners were authorized to make autopsies in all cases of obscure and sudden death, even if the suspicion of violence were wanting.

Dr. Hough, of New Bedford, said that it might happen, now and then, that medical examiners went beyond the letter of the law in order to comply with its spirit. He deprecated any attempt to alter the statutes - they were well enough at present. If authority was extended in the direction suggested, the county commissioners would naturally object to the larger account for autopsy fees, which such an extension would create. Moreover, the legislators when asked to amend the law would inquire if the change was not designed for the very purpose of permitting more autopsies and so of receiving larger fees. He felt sure that, in all necessary cases, medical examiners were not hampered under the present conditions imposed by law, and he saw some danger in any attempt to make a change. He objected to the proposed method of amendment because it left in doubt the question of emolument, and suggested that many objections might be removed by giving salaries rather than fees.

Dr. Durell, of Somerville, said that the law now in force was the best in the country concerning inquests; and, in his opinion, it would be unwise to meddle with it. It would be difficult to formulate a statute to cover all contingencies, and he hoped no attempt would be made in that direction.

DR. HURD, of Newburyport, said he was not in favor of any radical changes in the law relating to ¹ See page 576 of the Journal.

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medical examiners. If the medical examiner feels that an autopsy in any case is called for, he can obtain the authority required, if not from one source then from another. He mentioned a case of his own in which the mayor of his city having declined to authorize an autopsy, the district attorney willingly gave him the desired authority, as provided by law.

DR. DOLAN, of Fall River, wished some method might be devised by which the medical examiners in other counties than Suffolk might make more autopsies without the imputation of mercenary motives. In Suffolk County, where the medical examiners receive salaries, the ratio of autopsies to cases is one to four; in other counties, where fees take the place of salaries, the ratio is one to thirteen, the fear of creating a suspicion of extravagance being always present.

A committee was appointed to consider the expediency of asking legislation along the lines referred to in the discussion.

Dr. Hurd, of Newburyport, read a paper on the following question:

WAS IT MURDER OR SUICIDE?

DR. HOUGH, of New Bedford, said that in the cases of drowning in which he had made autopsies, about fifty in number, he had found water in the lungs or in the pleural cavities according to the time which had elapsed after the death; the presence of water in the pleural cavities, the evidences of inflammation being absent, he had come to regard as positive proof of drowning. Water in the stomach did not seem to him to be a sign of much value. He had usually found the kidneys congested; subpleural and subconjunctival ecchymoses had not been observed by him.

Dr. Presence, of Taunton, said that the presence of bloody coze at the mouth and nostrils seemed to him to have value as a sign of drowning; also, that "goose-skin" on the extremities was worthy of consideration. He reported a case of drowning in shallow water, the subject being an epileptic patient who had fallen in such a way that his mouth and nostrils were covered.

After brief discussion, the Society unanimously passed the following, which had been presented at the previous meeting: **

Resolved, That, in the opinion of the Massachusetts Medico-Legal Society, it is improper and objectionable conduct in medical examiners to accept service as medical experts for the defence in trials for homicide in this Commonwealth.

BOSTON MEDICAL LIBRARY ASSOCIATION. HOLMES MEMORIAL MEETING.

Tuesday Evening, October 30, 1894.

DR. F. MINOT, President of the Association: In opening this meeting it is hardly necessary for me to make any allusion to the connection between Dr. Holmes and our profession. I flatter myself that I have known that connection longer than any one here, as I was one of the first pupils Dr. Holmes ever had in the "Tremont Street Medical School," a private institution founded in the hope of endeavoring to put a little medical knowledge into the heads of medical students in addition to the lectures delivered in the

² See page 577 of the Journal.
³ Journal for October 11, 1894, page 371.

Mason Street College. We had a room over Metcalf's shop in Tremont Row, and there was a dissecting-room adjoining it. Dr. Reynolds, Dr. Holmes, Dr. Bigelow and Dr. Storer were instructors. It constituted a sort of primary school to the medical college; and it was a very much better school than the medical college itself at that time. Dr. Holmes was one of the most delightful of instructors, as you all know. His branch was the practice of medicine, and he and Dr. Bigelow published a book on that subject by taking Marshall Hall's "Theory and Practice of Medicine," and enlarging, correcting and improving it in every way. To Dr. Holmes especially I feel indebted for what little knowledge of anatomy I possess. You all know the strong interest he took in medicine and in literature; and it seems most fitting that he should be connected with this institution, which will be one of the most valuable to the medical profession, and through that to the community at large.

The next business will be the presentation of some resolutions by the Librarian, as chairman of the com-

mittee.

DR. J. R. CHADWICK, Librarian of the Association: In presenting for your consideration the resolutions upon the death of our first President, Dr. Oliver Wendell Holmes, in pursuance of the vote of your Executive Committee, I wish briefly to lay before you the considerations which give him a greater claim to the gratitude and veneration of this Association than of any other.

He was our first President, accepting the office when we had no assured standing in the community - when we had no funds, no books, no building, nothing but enthusiasm and a firm belief that the library which we intended to create was a real want of the medical profession of this city. During the early years of our undertaking he was faithful and assiduous in presiding over the meetings of the Executive Committee, guiding us by sage counsel and stimulating us by judicious encouragement. At the meeting held to inaugurate the occupancy of our present building he delivered an address which for knowledge of medical classics, play of fancy and wise advice could not have been surpassed by any English-speaking medical man. He contributed liberally from his own means on the occasion of our two appeals for pecuniary aid and secured contributions from his friends amounting to several thousand dollars.

He served as our President for thirteen years, retaining the position until 1889, long after he had withdrawn from all other connection with the medical profession.

Finally, on tendering his resignation, he gave us his medical library of 965 volumes and many pamphlets with the shelves which still contain them. What this gift, the largest that we have ever received, meant to the donor he told us at the time in these words: "These books were very dear to me as they stood upon my shelves. A twig from some one of my nerves (as I remember saying long ago) ran to every one of them. From the time when I first opened Bell's 'Anatomy' to that in which I closed my Sharpey and Quain and my Braithwaite's 'Retrospect' they marked the progress of my studies and stood before me as the stepping-stones of my professional life. I am pleased that they can be kept together, at least for the present; and if any of them can be to others what many of them have been to me, I am glad to part with them, even

though it costs me a little heartache to take leave of such old and beloved companions.'

Since this parting token of his unfailing satisfaction in our progress and abiding faith in our future, his interest has never flagged. By word of mouth and by letter he has repeatedly sought to know of our prosperity during the past six years of his waning powers.

His eulogy you will hear from lips more eloquent than mine; mine has been the duty of merely setting forth our obligations to him.

As Chairman of the Committee on Resolutions, I have the honor to offer the following.

RESOLUTIONS.

Resolved, That the Boston Medical Library Association has learned with profound sorrow of the death of its first President, Dr. Oliver Wendell Holmes.

Resolved, That this Association desires to put on record its appreciation of his long service as its President, and of the great interest which he always manifested in its welfare and also to give expression of its admiration of those qualities of mind and heart which made him the most eminent

and best beloved member of our profession in America.

JAMES R. CHADWICK,)
FRED. I. KNIGHT, Committee Committee. CH. P. PUTNAM,

DR. THOMAS DWIGHT: I beg leave, Mr. President, to second these resolutions. We meet here to-night to do honor to the memory of our friend Dr. Holmes, for many years our President. Not only those who have been associated with him, not only those who have been his pupils, but all of us who have known him — I might also say all who have read him — claim the privilege of calling him a friend. His great activity of mind brought him before us in many relations; but we all of us think of him as a man of letters first of all. This character suffuses his whole being. anatomist, as after-dinner speaker, working with the microscope or conversing with his friends, discussing philosophy or making a joke, he was always a scholar. How generously he put his literary powers at the service of his friends of the University, of the profession, many around me can testify. To-night we recall particularly his gift of his professional library to this Association. We think of him as the scholarly professor parting from books which were very dear to him. Those who have heard him speak of his library in public or private know that he cannot have given it up without a pang. He had a particular liking for the old masters of anatomy. He caught the quaintness of their conceptions and passed them on, yet more quaint He knew, as probably few by the transmission. professors of anatomy now know, how much we owe to each of these pioneers of anatomical science, what were his merits, what his limitations. He could trace the rise of many a doctrine or theory from its vague beginnings to its final development or collapse. had a true antiquarian's love for the volumes which he freely gave to this Association. There is little we can do in return. His name will be preserved in print after the walls of our new building shall have crumbled. None the less it is natural that we should wish in touch with each other and to free us from any in some way to offer a public, and so far as may be, a lasting tribute to his memory.

DR. C. B. PORTER: When I was asked by Dr. Knight to say something in regard to Dr. Oliver Wendell Holmes to-night, it was with special reference to personal reminiscences, that is, some of my own personal dealings with Dr. Holmes. I had the great sayings; and many times the crowd was so great that

pleasure to be demonstrator for eleven years under Dr. Holmes — I say great pleasure, because it was always a pleasure to be in his company. About him there was an atmosphere which I never remember to have been crossed by anything disagreeable. He possessed amiability of character; he showed appreciation of all the work that was done for him, making that appreciation known by public recognition before the class, and there was therefore a stimulus to those who worked under him to do their best to provide what he wanted. He was always genial, always kind. He would frequently come into the demonstrator's room, having climbed the long flight of stairs which many of you will so well remember in the old medical school, sometimes assisted by the janitor on account of his difficulty of breathing — would come puffing into the dissecting room, breathing laboredly and saying in a humorous way: "The bellows don't work well to-day"; but in a few moments he would recover his breath and say, "What have you prepared for me?" He would look it over always with a great deal of care, and then go in and present it to the students.

He had in lecturing, as a great many of you will remember, a peculiar way of directing attention to what might be called unimportant things or things which would not otherwise perhaps attract the attention of the students. I remember a remark of his one day when he was about to describe a muscle. He said: "Gentlemen, if you were carving a turkey at dinner, and you wished to present the lady whom you admired most at the table the most delicate part of the fowl, what part would you give her? The muscle I am now about to describe - the pectoralis minor." The pectoralis minor is not on the surface and is not of much special use in connection with the surgical anatomy in that part of the body, and would not perhaps attract attention, but that remark would fix it thoroughly in the minds of the students.

He was, so far as I know, a man entirely free from all professional jealousies, and he liked harmony in the profession itself. As I was asked to refer to personal reminiscences I am going to read a portion of a letter to me sent the morning after I gave a reception to Dr. Henry J. Bigelow and Dr. Holmes at the time when they were made emeritus professors of the Medical School.

296 BEACON St., December 29, 1882.

DEAR DR. PORTER: - Never was a pleasanter and more entirely successful social meeting than that of last evening. Such a gathering not only gives pleasure to all who are privileged to take part in it, but leaves a kindly harmo-nizing influence which will be long felt and help to keep our Boston brotherhood what it has so long been, a united family, singularly free from those jealousies and feuds which have not rarely been the reproach of the profession in other great medical centres.

With cordial thanks for my own share in its pleasures,
Faithfully yours,
O. W. Holmes. Faithfully yours,

In other words, he had felt that possibly that gathering in a friendly way tended to keep all of us nearer jealousies.

He was fond, I should say as I recollect him, of at-I remember what pleasure he seemed to take in the gatherings that took place at the Revere House in the old days, when he would be the centre of an admiring group of students listening to his bright those on the outskirts could hardly hear what he said. He was always frank in recognizing attention. When I had been his demonstrator for ten years I thought I would put him in mind of it. I sent him and Mrs. Holmes a basket of flowers on New Year's Day. The letter he wrote me in reply is so characteristic I may be excused if I read it.

296 BEACON St., January 1, 1878.

DEAR DR. PORTER: - Mrs. Holmes and myself send our heartiest thanks for the beautiful basket of flowers which are filling our house with perfume and our hearts with grateful sentiments. You and I have worked together while the flowers of many seasons have bloomed and faded, and I hope we may see a few more roses bud and bloom before

parting company.
With kindest regards, and best wishes for many more new years to you than I can hope to welcome, I am, as

always,

Faithfully yours,
O. W. HOLMES.

Few, I think, unless they knew Dr. Holmes verv well, would know how ready he was, and how in the simplest things in life there was a touch of humor to him.

At the time of the Peace Jubilee I returned to my office on Boylston Street one day, and I found my slate in the hall covered with Latin words and signed O. W. Holmes. Limmediately got down my dictionary, for I could not translate it without; and I found out by my translation that he had been to the Peace Jubilee, had soiled his boots so thoroughly with the dirt there that he did not like to go down town in such a plight, and stopped and asked my servant for a bootbrush that he might clean up his boots, and he had dignified this rather menial performance by writing it all out in Latin and leaving it on my slate. I do not doubt but that Dr. Holmes, with his keen sense of humor, was thinking of the trouble I would be put to in translating that Latin to ascertain the very commonplace thing which he had done. I very much regret that I did not save that slate.

DR. H. P. BOWDITCH: Your Librarian has asked me to relate this evening the circumstances under which I came into possession of a copy of a sonnet by Dr. Holmes addressed to Alma Mater. It is a sonnet which was written in 1882 at my request, and to my knowledge has never found its way into any of the published editions of Dr. Holmes's works; and I think when I read it most of you will be listening to a new poem by Dr. Holmes. The way it came into my possession was this: I was invited in 1882 to attend a meeting of the New York Harvard Club, and knowing that I might be called upon to make some remarks on behalf of the Medical School I thought it would be an excellent plan if I could induce Dr. Holmes to give me a few lines which I could read there, so as to insure a favorable reception for my own remarks. He kindly consented to write something for me, and then added: "You do not want anything in verse, do you?" plied that I had not ventured to think of anything like that, but that nothing could be more delightful. "Well," he said, "I will see what I can do." ful little sonnet, expressed my delight, and told him I thought nothing could be more appropriate, and that such a gem of literature to present. He then said: professional and the professional upon the literary.

"Now, let me hear you read it, I want to hear how it sounds." So I had to submit to the ordeal of reading a poet's verses at sight, with the poet as an audience. After I had acquitted myself of the task to his satisfaction he completed his kindness by offering to send me printed copies of the sonnet for distribution at the

ALMA MATER.

Yes, home is sweet! and yet we needs must sigh, Restless until our longing souls have found Some realm beyond the fireside's narrow bound Where slippered ease and sleepy comfort lie, -Some fair ideal form that cannot die, By age dismantled and by change uncrowned, Else life keeps circling in the self-same round, And the low ceiling hides the lofty sky. Ah, then to thee our truant hearts return, Dear Mother, Alma, Casta, — spotless, kind! Thy sacred walls a larger home we find,

And still for thee thy wandering children yearn, While with undying fires thine altars burn Where all our holiest memories rest enshrined.

OLIVER WENDELL HOLMES.

BOSTON, February 21, 1882.

I thought it might interest the members to see the original autograph poem as it was handed to me, and I have framed it in connection with one of the pictures the JOURNAL has contributed. I think the poem is one of the sweetest Dr. Holmes ever wrote, and the portrait the best representation of him as he appeared in the later years of his life.

DR. GEO. B. SHATTUCK: In meeting here to-night to do honor to Dr. Holmes's memory, we naturally think of him as we have all known him. All excepting the very youngest among us have known him, and some of us intimately; and here in this place we naturally think of him as a man interested in books and interested in our profession of medicine. His interest in both was continuous and always great, at one time more in one, at another time perhaps more in the other, but they always acted and reacted upon each other. I remember very well making a call upon him many years ago when I had just begun the study of medifound him in his library, then in Charles Street. He fell to talking about books, and he got a little enthusiastic and took down some of the books he was particularly fond of. He took down some of the anatomical books we have here now. I remember his taking down his copy of Albinus, his copy of Bidloo and of Mascagni, with the beautiful plates which those books all have; and if any of you have not availed yourselves of the opportunity of looking over those which you have here, it would be well worth your while to do so. His love for them is something I can remember to the present time. I recollect that he was turning over the Bidloo, which he was very Bidloo was the Dutch physician to William fond of. III, of England. Presently he turned over a page and came to a very beautiful lady who was holding out her abdominal walls in the same attitude one would take if one were going to dance the minuet. He pointed to it with great satisfaction, and said: " Is not or three days later he handed me a half-sheet of note she beautiful? See with what coquettish confidence paper, and said: "There is what I have written. You she shows the abdominal contents, as though to say, can see how you like it." I glanced over this beauti- 'Behold here are my jewels." And so he went on, but it was the real love which he had for those books which remained in my mind; and we always think of my speech would be the event of the evening with him in that way, his literary qualities act upon his

I recall two stories. Of course, I have heard a good many repeated. We all remember a good many, I have no doubt; but I recall two I have heard within a few days that illustrate one or the other quality. He was always so playful about such stories that I do not hesitate to repeat these in an intimate company of this kind. One of them illustrates the way in which his anatomical knowledge was always in his mind. He had been off lecturing and he came back to town. He had been compelled to attend some receptions; and a friend was asking him when he came back what sort of a time he had. He said: "Well, I had to go to some receptions, and I had to be introduced of course to everybody, and had to talk to everybody, and it was pretty long, and that sort of thing gets pretty tiresome. You stand on one leg and then stand on the other, and you get so tired finally that your testicles hang down to your os calcis." What a pithy statement of weariness! The other story I repeat as a pendant to this, because, whilst one shows the anatomical work cropping out in his conversation, the other shows his scholarly characteristics cropping out in anatomical surroundings. He was going though the old pathological museum at the old Medical School. Dr. Jackson had a specimen on the table; and as he walked by he looked at it and said, "Hollo, what is this?" Dr. Jackson said, "Why, it is a penis." Dr. Holmes said, "Where did it come from?" "Well," said Dr. Jackson, "there was an operation over at the Massachusetts Hospital. A man had to have his penis amputated and they sent it over here." Dr. Holmes said. "Well, does not that man make you think of Socrates?" Dr. Jackson said, "Make me think of Socrates? No." "Well," said Dr. Holmes, "is it not recorded that Socrates offered a cock to Æsculapius?"

There was another thing about Dr. Holmes which, it seems to me, ought to be emphasized, and which comes homes to me in a measure because I had opportunities of observing it, and that was his extreme accuracy; and I think it is very remarkable that we should note this in a person with his other characteristics. He was brilliant, of course. He was witty; of course we all know that. He had a very quick, rapid, almost intuitive mind; we all recognize that. He was a wit and a genius; but then we do not all of us remember that he was not only those things, but also a plodder and distinctly so, and it is very seldom that you find those things united. Dr. Holmes in all the work that he did was very painstaking, very accurate, and very laborious even to the smallest details. I was talking with a gentleman the other day. He and another friend were editing a review. They were then young men, and they knew Dr. Holmes very One of them was a kinsman. They applied to him for an article on Jonathan Edwards, asked him if he would not give them one. The review was not one with a very large circulation, but he took an interest in their efforts to make it a success, and he said he would. So they waited some time; and, finally, as the article had not been received, one of them went to see him, and was shown the reason the article was not ready, and what he had done. He found that Dr. Holmes had two large blank books ruled down with always that under all circumstances. Even in his parallel columns; and in these were noted all the references which Jonathan Edwards had made to any other writers in one set, and all the references which any other writers had made to Jonathan Edwards in another set, and all the passages of Jonathan Ed- | was doing when he was generous. In that connection

wards's own writings referring to each other, so that he had a double or treble set of cross-references there of everything concerning Jonathan Edwards. He spent the leisure time of a year in working up this article, and finally sent it to them. Practically it was in a measure given, because he certainly could have sold it to some other magazine or review for a more considerable sum than they were able to give him. It is simply another illustration of his kindness and his desire to help other people, and at the same time of his extreme accuracy and of the painstaking habits which he had in his work. In that respect he reminds me of a workman who takes a pleasure and a pride in doing good work. I think that this was his attitude toward his work apart from any question of remuneration. If remuneration came, very well; but whether it was more or less, the work must be for his own satisfaction.

I have sometimes queried in my own mind exactly why and how he came to be so accurate and painstaking. I suppose in a measure it was inherited. I think that his father, who had the tastes of an antiquary, must have had qualities of that kind, and I imagine in a considerable measure he must have inherited it; but I think also that he saw the value of those habits and the necessity for them, and that he cultivated any original characteristics which he had. Certainly the two occupations which took up most of his time, that is, his teaching of anatomy and his literary work, both of them tended to foster any such habit as that, any such characteristic which he might originally have had, and also tended to show him the necessity of cultivating it further.

He was very careful and exact about all his writing, about all his proofs, and very accurate in all these respects; and then in the midst of this accuracy would come out suddenly this fun and playfulness, and often it would be the last thing you would expect to be combined with that. I noticed in the report of the interview which Ernest Hart publishes in a late issue of the British Medical Journal, he gives an account of meeting Dr. Holmes, whom he admired very much, in London, and he was much struck with the purity of Dr. Holmes's English and complimented him upon it. Dr. Holmes acknowledged that he thought he spoke fairly pure English, but thought it was not so unusual in this country as Mr. Hart supposed, and finally, as they were taking leave, Dr. Holmes said to him, "I wish you would give me your ticket"; and Mr. Hart said, thinking now he had caught him, "In England we call that a card." The interview had been serious up to that point; but he could not resist having that little joke, which to this day Mr. Hart has evidently never comprehended.

He was keen and shrewd and business-like. knew perfectly well what he wanted to do and how to do it, what he wanted to get and how to get it, but at the same time he was never mercenary. He was generous by nature, and generous because he thought it was due from him to be generous. He was never little, never petty. He knew how to "hustle" and did "hustle," but never ceased to be a gentleman. He was reply to Hodge and Meiggs, one of whom certainly gave him great provocation, you can see that he could be sharp, but he was always the gentleman.

He was intelligently generous. He knew what he

I recall his delivering the poem at the centennial celebration of the Massachusetts Medical Society, which many of you will remember. It was a very excellent poem, and at that time the JOURNAL had made a good deal of effort to get out a suitable memorial number of that celebration. A good deal of hard work, a good deal of time and a certain amount of money had been spent in trying to bring that result about. After the exercises I went to see Dr. Holmes. I said, "I hope, Dr. Holmes, that you will feel that the Medical Journal is the proper place for your poem. We have these other mementos of the occasion." And he said, "Well, I hope I shall feel so too. I think I shall, but you know my position is such now that when I write a thing of that kind of course it has a market value, and I only mention this because I would like to think about it a little." I said, "Very well; you will let me know about it!" He said, "Oh, yes; I will write to you." After two or three days he wrote to me a kind note, and said he had thought it over, and made up his mind that the Medical Journal was the right place for that poem, and he should send it. He sent it, and it was published; and I think the Medical Library Association is now the owner of the manuscript.

DR. D. W. CHEEVER: I expressed my feelings in regard to Dr. Holmes so recently before many of the gentlemen here present that I may ask to be excused from making any formal remarks. I should like to mention one anecdote, however. About a year since I made a most charming call upon Dr. Holmes. found him in his library, and although he was quite infirm, still he entertained me half an hour most pleasautly. His characteristic dislike of being talked about by reviewers was quite evident at that time. I asked him how he was, and he said he was pretty well, but had some infirmities in his breathing, sight, and in his hearing. "By the way," said he, "there was a brute of a reviewer here one day who wrote that I was deaf. I am not deaf, only a little hard of hearing. When we come to shut up the shop as we all must, if nature will only put up the shutters one by one, we can get along.

DR. C. M. GREEN: I should like to say just a word in regard to Dr. Holmes. I am one of the younger men who had the privilege of being taught anatomy by Dr. Holmes. I recall the way he had of playfully illustrating things, that was brought to mind by Dr. I remember the way he used to speak of the fimbriated end of the Fallopian tube, as reminding one of the fringe of a poor woman's shawl. I also remember, and I would like to recall to my classmates here, the occasion of our graduation from the Medical School, when Dr. Holmes gave a breakfast to the class of '77. that was the year when the corporation gave the Class Day. The class, I believe, failed to elect officers, and it was thought as the corporation gave a Class Day they would make something of the day for the Medical School; and on that occasion it was Dr. Holmes of the professors who gave a breakfast to the medical class. I remember meeting Dr. Minot there.

A little incident once occurred to me in meeting Dr. Holmes which shows how much he loved to be remembered by his pupils. He used to say to us that he had so many pupils he could not remember us, perhaps could not remember our faces, and certainly not our names. He said he would be most delighted if we would speak to him, and that we must not feel hurt if he did not bow to us first. One day I was coming flagging interest in its welfare.

down in a Back Bay horse-car which was crowded. Dr. Holmes entered, and there was no seat. I rose and offered him my seat. At first he declined to take it. I said no pupil of his would sit and see him stand. His countenance lighted up, and he accepted the seat from a former pupil which he had been unwilling to take from a supposed stranger.

The PRESIDENT: If there is no other gentleman who wishes to speak, the Chair will put the motion proposed by Dr. Chadwick and seconded by Dr. Dwight.

The motion was carried unanimously.

DR. CHADWICK: Since the meeting of the Executive Committee at which a recommendation to change the name of this Association was adopted, the committee have come to realize that perhaps so radical a change as this would not be advisable; they have therefore authorized me to offer as a substitute a motion that "the principal library hall in our new building be named the Holmes Hall in memory of Dr. Oliver Wendell Holmes," that in it be placed our portrait of Dr. Holmes, and his library. These other mementos, portraits and autographs which I have collected I shall donate for the same purpose.

DR. W. STURGIS BIGKLOW: The custom of connecting with an institution the name of a distinguished man is one which is liable to grave abuse. It may readily be taken advantage of for the advancement of private interests or the promotion of selfish ends. But, on an occasion such as this, it would be alike unbecoming and ungrateful to fail to express a full and heartfelt recognition of our profound obligation to our great-

Dr. Holmes was a man of many sides. He was familiar with many forms of mind and many varieties of character. Like Lord Bacon he thought that nothing human was alien to him, and his interests were as wide as human nature and as deep as human thought. He was one thing to all men—kindness. No one who came to him for advice or help left his presence without a sense of gratitude and of personal obligation, not only for his interest in the applicant's individual welfare, but for the sweetness and light which seemed to radiate from his life into their own. In his own words—

"A whiter soul, a fairer mind,
A life with purer course and aim,
A gentler eye, a voice more kind,
We may not look on earth to find.
The love that lingers o'er his name,
Is more than fame."

But, among all his interests, two were dominant and transcendent: medicine and literature. By the first he is known to more than a third of a century's students and to the whole medical profession, by the second he is known throughout the English-speaking world.

The Boston Medical Library is in this community the representative and embodiment of both these interests. As such he recognized it. He assisted at its birth; aided and stimulated its growth; as its first president, gave it for many years the benefit of his wisdom, his counsel and his experience; afforded it material aid and support in many forms and through many channels; gave his own superb medical library—the accumulated treasures of a lifetime—to become the nucleus of its collections; and from its earliest beginnings up to the end of his life took an earnest and unflagging interest in its welfare.

This debt of obligation to such a man is far too heavy for us to repay, but we can at least acknowledge it. We cannot add lustre to his name. We cannot add one ray to the splendor of his reputation nor one leaf to his crown of bay.

But it is alike our duty and our privilege to put on enduring record, so far as we may, our gratitude for his kindness and help; our pride in his leadership and our sympathy in the world-wide sorrow at his death.

No better words perhaps can be spoken of him than those which he wrote of another more than half a cen-

tury ago:

"Thoughtful in youth, but not austere in age;
Calm, but not cold, and cheerful, though a sage;
Too true to flatter, and too kind to sneer,
And only just when seemingly severe;
So gently blending courtesy and art,
That wisdom's lips seemed borrowing friendship's heart;
Taught by the sorrows that his age had known
In other's trials to forget his own,—
As hour by hour his lengthened day declined
A sweeter radiance lingered o'er his mind.
Cold were the lips that spoke his early praise,
And hushed the voices of his morning days;
Yet the same accents dwelt on every tongue,
And love renewing kept him ever young."

Mr. President, I have the honor to second the resolution.

The resolution was then read and unanimously adopted.

The PRESIDENT: Dr. C. J. Blake is invited to present the portrait of Dr. Holmes to the Society.

DR. C. J. BLAKE: At this meeting evidently informal remarks and reminiscences are permitted. Therefore, before proceeding to the subject of the portrait let me say that Dr. Cheever's anecdote recalls a remark of similar import made by Dr. Holmes, and, with your permission, I must tell another story to lead up to it. Dr. Holmes was very fond of a story, a professional story was especially dear to him; and I asked him one day about two years ago if he had ever heard the story of Dr. Jackson's remark concerning my uncle, James Blake. Mr. James Blake died a good many years ago. He had some peculiar disease of the bladder, and realizing that this was a rare opportunity he requested that an autopsy should be made by his old friend, Dr. J. B. S. Jackson. In the course of time Mr. James Blake died, and I, then a medical student, was deputed to call upon Dr. Jackson and prefer my uncle's request. "What!" said Dr. Jackson, "my friend, your uncle, James Blake, dead! Of what did he die?" I gave as nearly as I could the circumstances of my uncle's death, and said that he had especially requested that Dr. Jackson should make a post-mortem examination. "Oh, I am very sorry." said Dr. Jackson, "Thursday is the only time—funeral Thursday. Wednesday afternoon, it is quite impossible; I have an engagement with Dr. Holmes at that time which I cannot break. You will have to go for Fitz. He will do everything well, properly; but I cannot tell you how much it grieves me to think that I cannot pay this last tribute of respect to my dear old friend." The story led to inquiries for the health of my father, a year older than Dr. Holmes, and to the remark, "You young fellows do not know how much you owe to us who stand between you and the door; but when we have passed through, you will find that you are very much nearer to it than you think now."

The portrait here which is to be hung in the Holmes Hall was painted by Mr. E. T. Billings in 1889, the year in which Dr. Holmes resigned his position as President and gave his library to the Boston Medical He had been asked to have his Library Association. portrait painted on several occasions, and several artists were suggested; but he always objected, saying: "I am old; it is fatiguing; I shall have two or three dozen sittings; I hardly think I care to under-Mr. Billings had painted the portrait of Dr. Bowditch which hangs in this hall, and the picture was in my house in Marlborough Street. On the occasion of one of Dr. Holmes's calls, I asked him to look at it, which he did with the remark that he was not a judge of painting, but that this was a good likeness with one exception, namely, that he thought he had never seen Dr. Bowditch quite so spruce before. He examined the portrait still further, and said again, "Yes, that is a very good likeness." Here seemed to be an opportunity. I said: "Dr. Holmes, Mr. Billings would be very glad to paint your portrait. has painted the portraits of Garrison, Phillips, and Dr. Bowditch, and if you like this portrait, are you not willing to try it? Let Mr. Billings have half-adozen or a dozen sittings if you find that they do not tire you, and stop at any time." Under circumstances he consented, and so it came about that he went to Mr. Billings and had the portrait painted. Mrs. Billings was present at many of the sittings, and has kindly contributed the following notes. Dr. Holmes thought that the artist would not succeed in painting the portrait in a short time and fully expected to get tired and give it up.

The portrait began under discouragement. Dr. Holmes had been painted and photographed so many times, and, as he said, unsatisfactorily always, that he had no faith that any one could reproduce his face except to make him wish afresh that "Nature had been kinder to him." In his lines "To the Portrait of a Lady," he says:

"I love sweet pictures; I will own
That I would like myself to see my portrait on a wall
Or bust upon a shelf;
But Nature sometimes makes one up
Of such sad odds and ends,
It really might be quite as well
Hushed up among one's friends."

He was very sensitive and critical, yet satisfied with truth only; so that after the second sitting, during which Dr. Holmes with great frankness expressed his mind in regard to the picture which he looked at each time, the painter became disheartened, and asked his wife to happen in next time to sit with the sitter. The third sitting was a remarkable one. Dr. Holmes said there was a good foundation. He stood before the picture and talked on the anatomy of his face, and went over all the muscles, giving their names. He was delighted to learn that Mr. Billings had studied art anatomy with Dr. Rimmer, and that he was receptive and sympathetic on this subject. His faith grew, and that helped the work wonderfully. He became more at ease; was playful, witty, beaming; and at the close of this sitting studied the painting, and said, "Well, Mr. Billings, you have got the old man. You have the equilateral under the nose, made by the middle of the upper lip, the lower part of the nose, the full muscle of the cheek and the upper lip. No one gets that. You have it; and without it there can be no likeness of me - hereafter - for expression.'

He brought in at the fourth sitting many photographs taken in various places, which the two studied together. He said all were unsatisfactory, the London ones being, to his mind, the best. When he came into the studio this time, he playfully put his hat on the bust of "The Father of his Country."

A large portrait of George Bancroft, just finished, pleased him very much; and he never failed to salute it every time he came with "Good morning, George," or some pleasant word.

He never went to sleep when there was any one to listen to him, and while he was talking in an easy way, the expression would change with lightning rapidity; and the painter's brush flew with equal speed, catching the flitting motions, utterly silent himself absorbed in the work. Mr. Billings had a way of motioning with an uplifted finger when the sitter moved out of position; Dr. Holmes called this, "the gentle telephoning."

He reverted often to his early life — told of a sister who had died when he was a very young man. They had been very dear to each other; and Dr. Holmes said the best in him, the most he had reached, was owing to her. He spoke of his age; said a companion late in life was the greatest boon Heaven could give to man; that though triends were kind, he yet had many lonely hours. His contemporaries, he said, had passed on.

He spoke of his gift of books to the Medical Library; said he meant to get the enjoyment of seeing them used; that he had already, when unobserved, seen young men looking at some very early volumes. He said the books gave a good idea of the progress of medical practice in his day, and that he took the most comfort in what he had done in forwarding Truth. He here spoke of his memorable saying of throwing all medicine except, etc., into the sea; said he was often misquoted, and told what he did say; he hoped it would do good.

Truth seemed to him supreme in all the paths of life.

Truth seemed to him supreme in all the paths of life. He did not wish to be helped, as he said it would make him feel old. His step was sprightly, his form erect, and his voice particularly unlike an old man's.

When finished, he was enthusiastic in his commendation of the portrait, and added, "You have made me look like a gentleman; the coat is a credit to the tailor." He presented the artist with all his photographs, and thanked him for his patience, and congratulated him.

The portrait was paid for by subscriptions by members of the medical profession, and it is in behalf of these gentlemen that it is presented to the Medical Library Association — there were many contributions given without names. It was deemed desirable to have, if possible, a photograph of the picture; and this photograph is unique because it would be impossible to reproduce it from the portrait as it stands. The reds would take black, and the yellows and certain of the lights would be sharply defined. It was necessary, in order to get a satisfactory photograph of the portrait, to have Mr. Billings paint it over with fugitive colors; and this he did; several negatives were taken, one coat of color after another being put on until finally the photograph approved by Mr. Billings and by Mr. Cook, the photographer, was obtained. There are also prints from some of the early negatives. Holmes's opinion of this portrait, which is to be permanently in the possession of the Library and in the hall bearing his name, is of course of value. One remark I remember his making of it as he looked at it: "Yes," he said, "it is there; the age is there; the wrinkles are there. It is a likeness. It is the portrait of an old man; dew-lap and all."

I have here a copy of the letter of which this is the original. This was in response to the request that he should write a letter stating his opinion of the portrait in order that the letter might be preserved with it. Dr. Holmes also saw the portrait two or three times after it had been finished; and on each occasion expressed himself still more satisfied with it, saying finally, "The portrait grows upon me. I think that is the likeness of me that will stand."

296 BEACON St., February 11, 1890.

DEAR DR. BLAKE: — I consider Mr. Billings' portrait of myself an excellent likeness, and so far as I can judge, a good painting.

a good painting.

I have had many pictures and photographs taken, but it seems to me that no one of them has been so satisfactory as this by Mr. Billings.

Very truly yours,

OLIVER WENDELL HOLMES.

DR. CHADWICK: I wish to move a vote of thanks to Dr. Blake and his fellow-contributors to the memory of Dr. Holmes.

Motion carried unanimously.

DR. CHADWICK: It may interest some of those who have not seen all of these portraits to have their attention called specifically to them. These five portraits were made for Mr. Bartlett, the sculptor, who was to make the bust of Dr. Holmes. They never have been published except the one that recently appeared in the *Medical Journal*. Here is a bronze cast of his fist which Mr. Bartlett took the opportunity to make. A little episode in connection with this is rather amusing. Mr. Bartlett as he was about to cast the hand, asked Dr. Holmes if he would hold a pen. He said, "No; take it that way (the first closed tightly); that does not show the old man's wrinkles, does it?"

On that wall hang the elevations and the floor plans of the building which we expect to build. Youder is a chart of the growth of the six or seven principal medical libraries of the country—the yearly growth. Here are a lot of photographs of all kinds connected with Dr. Holmes. These are proofs, I think, from the last published edition of his works. Here is one of the earliest, if not the earliest, daguerreotype of Dr. Holmes, dating prior to 1850.

Recent Literature.

Obstetric Surgery. By EGBERT H. GRANDIN, M.D., Obstetric Surgeon to the New York Maternity Hospital; Gynecologist to the French Hospital, etc.; and GEORGE W. JARMAN, M.D., Obstetric Surgeon to the New York Maternity Hospital, Gynecologist to the Cancer Hospital, etc. Philadelphia: The F. A. Davis Co. London: F. J. Rebman.

This book differs from most obstetric text-books, in that it fills an empty niche in the literature of the subject. It is valuable not only from this fact, but on account of its own great intrinsic excellence. The authors have thoroughly succeeded in the difficult feat of combining a wise and ripe conservatism with that spirit of promptness in diagnosis and readiness to look the gravest emergencies in the face, which is the type character of the recent advances in obstetrics. book will be of real interest to specialists, but the fact that it avoids lengthy discussions of unsettled points, and confines itself to a clear and practical exposition of the operative methods and principles which are accepted by the leading obstetricians of to-day, renders it pre-eminently a book of the greatest value to the general practitioner; and it is a pleasure to urge its perusal upon him. The unusual excellence of the book certainly warrants an extended review, which can best be given by a separate consideration of the individual topics which it takes up.

It is one of the few books in which the directions for asepsis are at once thoroughly complete and such as can be adapted to private practice. The chapter on pelvimetry is timely and excellent, though we disagree with the statement that the justo-minor pelvis is a rare form in America, and on the contrary believe it to be the most common of the deformed types among American born women.

The section on the induction of abortion and premature labor is one that should be read by every one who is concerned with these operations. This is the first textbook that we have seen in which only the modern methods are recommended, and in which the dangers and advantages of the different procedures are justly stated in accordance with the views of the present day.

It is to be regretted that the section on the use of the forceps falls a little below the very high standard of the rest of the book. The directions for their use might easily be made more precise and detailed. The distinction which the authors make between medium and high forceps is to be praised, but it is surprising that in the consideration of the application of the forceps to partially rotated, occipito-posterior positions, no mention whatsoever is made of the operative procedures for the restoration of flexion, of the necessity for securing and maintaining flexion as a necessary preliminary to rotation of the head, nor of the impossibility of successfully delivering a persistently extended head. It is, we think, a mistake that the very excellent article on the internal rotation of the child in occipito-posterior positions, high, should have been placed under the head of version, although we concede that that is its schematic place.

The chapter on version is careful and excellent, though the authors seem to look upon incisions into the cervix somewhat more lightly than most authorities.

The chapters on symphysiotomy and the abdominal operations are all that could be desired — full, clear, and moderate in tone, yet fully up to the spirit of the day.

The sections which treat of the destructive operations are, perhaps naturally, written with rather less enthusiasm than the rest of the book, but are nevertheless very good.

The chapter on the surgery of the puerperium is one of the best that the book contains.

We dissent heartily from the author's statement that most lacerations of the cervix should be immediately repaired; though we agree with him as to the ease with which the operation can be performed with but one untrained assistant. The directions for the repair of the perineum are excellent, and if the general practitioner would but learn to attempt some such simple form of suture, he would, we think, find his results much better than by the use of the usual shallow external sutures. Rupture of the uterus is well and wisely treated.

In the section on septic endometritis, the authors seem to place a little too much reliance on the existence of fetor as an early symptom. In our experience it is often absent. Yet this section is, upon the whole, admirable and to be highly praised.

We are surprised that the authors omitted to mention the use of the vaginal route in the treatment of what they call intra-extra-peritoneal abscess, that is, in purulent localized peritonitis. In our experience it more in this new one.

has many advantages over the abdominal method, in those cases to which it is applicable.

The book is at its best in the chapters which treat of major obstetrical surgery, but deserves hearty praise throughout.

A Treatise on the Principles and Practice of Medicine.

Designed for the use of Practitioners and Students of Medicine. By Austin Flint, M.D., LL.D. Seventh edition, thoroughly revised. By FREDERICK P. HENRY, A.M., M.D. Philadelphia: Lea Brothers & Co. 1894.

The last edition of this work appeared in 1886, the author being assisted in its revision by his son, the present Prof. Austin Flint and by Prof. Wm. H. Welch of the Johns Hopkins University. The section on General Pathology, which contained about one hundred pages, has been omitted from this edition. The present editor has contributed about one hundred pages of new matter, in which are included some twenty distinct articles, besides numerous interpolations in every section of the book. The editor's contributions are signed with an H. Special attention has been given to the department of therapeutics. The present edition contains 1143 pages, about the same number as the former edition. The editor's work, as distinct work, has been well done. The desirability, except, perhaps, from the commercial point of view, of continuing the life of a treatise on the principles and practice of medicine after the death of its author, is open to a difference of opinion. Flint's Practice of Medicine, as he left it, is too well known to require extended comment.

A Dictionary of Medicine. Including General Pathology, General Therapeutics, Hygiene and the Diseases of Women and Children. By various writers. Edited by RICHARD QUAIN, Bart., M.D., LL.D., F.R.S., etc., assisted by FREDERICK THOMAS ROBERTS, M.D., B.Sc., etc., and J. MITCHELL BRUCE, M.A., M.D., etc. With an American Appendix by SAMUEL TREAT ARMSTRONG, M.D., Ph.D., etc. New edition, revised throughout and enlarged. Vol. I, Abdomen — Lysis; Vol. II, Macrocheilia — Zyme. New York: D. Appleton & Co. 1894.

The first edition of Quain's Dictionary of Medicine was issued in 1883, and was in one royal octavo volume of 1816 pages. The present edition is in two volumes, the first containing 1261 pages and the second 1305 pages. The difference represents the changes and progress in the subjects of which it treats during twelve years, years which embrace an unusually active and eventful period in the history of medicine. In so far as possible the different articles have been revised by the original contributors. The editor has been assisted by two colleagues, and an American appendix has been added. Forty-three new illustrations have been furnished.

With the exception of the editor of the American appendix the contributors are all Englishmen, and generally writers well known in connection with the special subjects. The American appendix contains about forty pages, and consists chiefly of information in regard to American mineral springs and some short statements on topics peculiarly American.

Those who have learned to value Quain's Dictionary of medicine in its first edition will appreciate it still more in this new one.

THE BOSTON

Medical and Surgical Journal.

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PANCREATIC DIABETES.

THE subject of the pathogeny of diabetes was brought prominently before the recent meeting of the French Congress of Medicine at Lyons, and was discussed by Lancereaux, Lépine, Glenard, Comby, Teissier, Charrin, Renault, and others. We shall here take up but one aspect of the question and state the principal facts on which the existence of pancreatic diabetes is affirmed; these facts are now numerous, and are constantly increasing.

In 1877 Lancereaux reported to the Academy of Medicine, with the morbid specimens, two interesting cases of "grave diabetes," dependent (as he believed) on destructive lesions of the pancreas. In 1879 appeared the inaugural thesis of Lapierre on diabetes caused by alterations of the pancreas. The disease, as he describes it, begins suddenly, and manifests itself by intense thirst and hunger, then by abundant polyuria with sugar oscillating between 800 and 600 grammes per day, and rapid emaciation, with loss of all the forces, and finally complications (broncho-pneumonia, diabetic coma, phthisis) that carry the patient off. The same writer published a subsequent memoir founded on twenty well observed cases; in fourteen of these there was atrophy of the pancreas more or less advanced. In some the disease was due to calculous obstruction of the duct, in others to chronic disease followed by atrophy of the organ, and in still others by

These observations received powerful confirmation by the experimental results of Mehring and Minkowski who extirpated the pancreas in dogs. They found that diabetes begins a short time after extirpation and persists till the death of the animal. "In addition to the glycosuria, there are polyuria, great thirst, hunger and rapid emaciation." In one dog, which had fasted forty-eight hours, the urine contained from five to six per cent. of sugar, while another dog, weighing sixteen

¹ Quoted from Sajous' Annual, 1890.

pounds, fed on an exclusive meat diet, eliminated daily almost one litre of urine with six to eight per cent. of sugar. The urine also contained acetone. No glycogen was found in any of the organs after death, even in animals that had been dead four weeks or more. It was said there was no injury to the solar plexus by the operation, so that the diabetes could not be referred to nervous influence. These investigators noticed that whenever there was left any fragment of the pancreatic tissue in the abdomen, glycosuria did not develop. The total ablation of the pancreas produces a permanent diabetes, and this comes on immediately and attains its maximum in two or three days.

Dominicis, an Italian physiologist, made subsequently a similar series of experiments, though without absolutely identical results; in a few of his auimals (one-third of the cases), the diabetes failed to appear after total extirpation of the pancreas, and where the disease did appear, it was not till twenty or thirty hours after the operation.

Redmond, of Metz, in 1889 and 1890, published some experiments made with Marinisco and Chaput, as the result of which they conclude that total destruction of the pancreas generally produces permanent diabetes, and that even partial ablation of this organ is sometimes followed by the same effect.

Hedon excised the pancreas in twenty-two dogs, and in each case diabetic urine was passed the day after and persisted until death with all the characteristic symptoms of sacharine diabetes. When injections of paraffine were made into the pancreatic duct, destroying the digestive function of the gland, diabetes did not supervene.

Thiroloix 4 succeeded by a novel method in completely destroying the pancreas, and yet in keeping his dogs alive a long time. By injecting asphaltum into the pancreatic duct, he caused sclerosis of the organ, which became shrunken to a hard, firm cord, deprived of all gland cells, yet under these conditions glycosuria did not appear. In other cases he removed a portion of the pancreas, after which he obtained symptoms of intense glycosuria. In another series he removed the whole of the pancreas and obtained a lasting diabetes. On autopsy, lesions of the solar plexus were noted. His conclusion is that ablation of the paucreas acts reflexly, by its influence on the nervous system. In other words, "pancreatic diabetes may be regarded as a particular form of nervous diabetes." This does not differ from the old theory of Klebs which regards diabetes as an expression of lesions of the solar plexus. This is the view of the pathogeny of "lean" (grave) diabetes held by Mathieu in the Traité de Médecine.

Lépine, who was co-referee at the recent Lyons Congress, has recorded forty cases of removal of the pancreas in dogs. After complete removal, he has always noted the appearance of sugar in the urine within

Giorn, Intern. de Sc. Med., 1889, p. 801; Traité de Médecine, tome
 La Semaine Médicale, October 29, 1880; also Sajous' Annual, 1891, vol. i, p. 64, G.
 Thèse de Paris, 1892.

eight hours, and the diabetes is permanent. He believes that the blood has the power of constantly destroying glucose by the action of a ferment made in the pancreas (glycolytic ferment); this ferment is diminished in diseases of the pancreas and wanting when that gland is destroyed. Lépiue adduces experiments which he thinks sustain this view. It is interesting in this connection to note that Thiroloix in considering the results of pancreatic grafting, an ingenious device practised by Minkowski, Hedon and himself (whereby the pancreas in dogs is brought out of the abdominal cavity and grafted into the muscles of the external walls), has modified his former theory, and has adopted Lépine's conclusion "that the pancreas produces the principal glycolytic ferment which destroys glucose in the blood" and thus prevents its reaching the urine.5

De Renzi and Reale in their numerous experiments have-caused diabetes in .75 per cent. of the animals on which they produced entire extirpation of the pancreas. They also claim to have caused glycosuria by extirpating the salivary glands (parotid and submaxillary). Minkowski,5 in reviewing their work, says that diabetes never fails to appear after complete removal of the pancreas if the animals live long enough after the operation. This statement is founded on fifty-five experiments made on dogs. Three times only did the sugar fail to appear in the urine; but the dogs succumbed during the first 24 hours. As to glycosuria after incomplete extirpation, he admits its existence, though in general it is slight; in one case, however, there was serious diabetes, though the fragment of pancreas left was fairly large. He regards glycosuria following extirpation of the salivary glands as only temporary. Lépine, in his communication to the recent Congress, October 29, 1894, defines his glycolytic theory. The "ferment" is taken up by the leucocytes and carried by them to the tissues where it aids glycolysis. His experiments on artificial circulation have demonstrated the influence of a ferment in the blood on the consumption of sugar. An animal (a healthy dog) is bled to death; into one of the hind legs blood is transfused that is poor in glycolytic ferment (being taken from the vessels of a dog whose pancreas has been extirpated). Into the other leg blood rich in glycolytic ferment is transfused, being taken from a healthy animal. It is invariably found that the consumption of sugar is greater in the limb into which is transfused blood containing a normal amount of glycolytic ferment.6

Lépine does not believe that the "glycolytic power" is exclusively under the dependence of the pancreas. The glands of the duodenum seem in some cases to have a vicarious action with the pancreas, and this may serve to explain, in a measure, the adverse cases noted by Dominicis, by Reale and Renzi and others.

It will be seen that the whole subject is still involved in much obscurity, yet that there is a form of diabetes that can properly be called pancreatic, seems established.

ANNUAL REPORT OF THE SURGEON-GEN-ERAL.

THE VALUE OF THE ARMY SURGEON.

A REDUCTION was made during the last session of Congress in the number of medical officers comprising the medical corps of the United States Army. The original proposition was to reduce the number of assistant surgeons from one hundred and twenty-five to ninety, the reduction to take place as vacancies occurred. The bill when passed directed that the number of assistant surgeons be reduced to one hundred and ten, a loss to the corps of fifteen instead of thirtyfive, as at first suggested. The report of the Committee on Military Affairs argued that as the number of military poets was reduced, the number of medical officers could be correspondingly reduced, and that where it might be necessary to employ outside attendance of physicians, efficient services could always be secured at the cost of one-fifth to one-fourth of the average salaries of the officers of the medical corps. At the same time no provision was made by which private physicians can be placed in charge of the medical department at a military post.

The proposed reduction excited much comment at the time it was under discussion; and in the report of the surgeon-general for the fiscal year ending June 30, 1894, just issued, the surgeon-general avails himself of the opportunity to discuss somewhat at length the reduction and the reasons assigned for it. He also quotes letters from the commanding officers of various departments giving their ideas upon the matter. The whole gives so good a view of the value of the military surgeon and of his varied duties that it seems worthy of consideration.

The Committee on Military Affairs would seem, from the extracts from their report, to hold the same idea of the surgeon's duty that was common at the outbreak of the Rebellion, as they give as a reason for reducing the medical force, the fact that recruits are picked men and therefore less in need of medical services than the same number of men taken at ran-Even among such picked men the actual amount of acute illness is shown to be considerable, but the chief duty of the medical officer is the prevention of sickness and maintenance of health. Again, an important part of the duty of a medical officer in a garrison is to decide whether enlisted men who report themselves sick are in reality unfit to perform their duties or whether they feign sickness. In fact, his presence, as a member of the garrison, is more important than that of any other officer, for no other officer can perform his duties; whereas any line officer present can perform the duties of quartermaster, commissary of subsistence, adjutant or commanding offi-

The duty of the medical officer goes further than attending the sick and acting as health officer; it is his duty to be ready and to prepare his hospital corps detachment for any emergency and especially for field service. The amount of such service required of our

See Sajous' Annual, 1893, vol. i, G. 6.
 La Semaine Médicale, October 31, 1894.

army surgeons is very much greater than one unacquainted with the matter would suppose. Their loyalty to their service was well illustrated during the recent troubles in Chicago, when three medical officers on leave threw up the unexpired portion of their leaves and reported for duty with the troops.

The opinions of the general officers of the army as to the value of the medical officers is in a way more important than any opinion coming from the medical officers themselves.

General Howard writes as follows:

"With troops, under the varied conditions of service, a special class of physicians trained in the service is indispensable. The duty of these is to understand, anticipate and meet conditions wholly out of the line of civilian practice; and without them experience has shown that the troops must endure great additional suffering in actual service. Such a class is not to be found in civil life; it is not the creation of a day but the result of careful training and experience, and becomes especially valuable to the government largely through such experience and the knowledge gained in the performance of its duties in the public service."

The testimony of other generals is to the same effect.

In this connection it is instructive to note the pains taken to educate the medical men who enter the army. The operations of the newly established Army Medical School during its first year are reported at some length. Five newly appointed assistant surgeons and four older officers were in attendance. The instruction was given at the Army Medical Museum, and the subjects comprised military surgery, medicine and hygiene, chemistry, pathology, bacteriology, military law and medical jurisprudence, and comparative anatomy, besides hospital-corps drill and instruction in riding. Synopses of the lectures and courses of study are printed, and show the very great care given to the development of the physician and of the soldier.

The interest of the regular army in the militia of the several States is more and more manifest. It suggests itself to a non-military mind that the Army Medical School might very easily be utilized to strengthen the sympathy between the medical corps of the various bodies. For instance, each State might be given the privilege of sending one medical officer to the school each year. It would entail little if any additional expense on the school, as it is not likely that the number of militia officers in the school at any one time would exceed those of the regular army. The value of a single medical officer educated up to army requirements would be great for any State; and the general effect upon the school ought to be good, for no regular would allow himself to be surpassed by a volunteer.

The JOURNAL is now publishing a lecture by Surgeon Hoff on "The Military Medical Officer in Peace and War," which gives an accurate picture of what is required of the army surgeon.

INSTRUCTION IN THERAPEUTICS: PHYSI-CIANS' PRESCRIPTIONS.

It cannot be denied that in many of our Medical Schools, and even in some where the standard of instruction in other departments is most commendable, the teaching of therapeutics, of prescription making, of the importance of writing legibly — in a word, of theoretical and of applied therapeutics — is not only comparatively but positively neglected.

At the recent meeting of the Mississippi Valley Medical Association, at Hot Springs, November 20th to 23d, Dr. S. Loving, of Columbus, O., under the title of "Physicians' Prescriptions," read some timely remarks on this subject. He takes the extreme ground that in but few of the medical schools of the present day - of this country at least - is the theory and art of prescribing taught or even mentioned. He truly says that hundreds of bright, enthusiastic young men, full of knowledge of other departments of professional learning, and of hope and ambition, are turned out every year without having had even a hint of the difficulties which they must encounter when they essay their first prescription. We seldom read of mishaps from defectively written prescriptions in England, Germany or France, where requirements are larger and more systematically taught. When such occur, the apothecary is usually to blame. The same carelessness and lack of method, notable in regard to the writing of prescriptions, is to be found in the combining of medicines in the various forms. Sufficient attention is not always given to compatibilities, chemical and therapeutic, to solubilities, the influences of light, temperature, the air, and of other circumstances affecting the condition of drugs and chemicals. Many failures in treatment and many accidents, some serious in character, result from carelessness or want of accuracy in the directions given to nurses and patients for the administrations of medicines after they have been brought ready for use. Dr. Loving asks: Why should the medical profession of the United States, in other respects so quick to see their own advantage, so sagacious in diagnosis, so bold in operating and in treatment, neglect so important a branch of knowledge as the The answer is to be theory and art of prescribing? found, he thinks, in carelessness on the part of teachers and pupils.

MEDICAL NOTES.

DIPHTHERIA IN St. Louis. — Diphtheria is so prevalent is certain portions of St. Louis as to be considered epidemic. A large number of the earlier cases are said to have been reported by the physicians as "croup" or "laryngitis."

IMMUNIZATION BY THE DIPHTHERIA ANTITOXIN.

—Professor Behring has concluded, as the result of his recent investigations, that the dose of antitoxin necessary to produce immunity is one-quarter of that given for the cure of the disease, the heildosis. One-tenth of the curative dose has heretofore been considered

efficient. This dose may be considered protective for about ten weeks, after which time it is advisable to reinoculate in persons exposed to diphtheria. The dose is the same for children and adults.

AFTER-EFFECTS OF ANTITOXIN.— An exanthem resembling measles has been observed in two cases of diphtheria after the employment of antitoxin in Berlin. The eruption, which occurred chiefly on the extremities, and was accompanied by fever and pain in the joints, was described as an erythema exudativum multiforme, and persisted for eight days.

THE PREPARATION OF DIPHTHERIA ANTITOXIN BY ELECTROLYSIS.— Smirnow gives, in the Berliner Klinische Wochenschrift, No. 30, 1894, an account of experiments which he has made on the preparation of antitoxin by electrolysis, in the hope that this method might supplant the tedious and expensive method of animal immunization. After injecting a dose of pure bouillon culture of diphtheria, which proved fatal in a control experiment, into guinea-pigs, he employed bouillon cultures through which a current of electricity had been passed, as a heilserum, with successful results. He is hopeful that the serum prepared by electrolysis may be effective in the human subject.

HONORS TO PROFESSOR KITASATO.— The city of Nagasaki has presented Professor Kitasato with a gold cup, in honor of his discovery of the bacillus of the plague.

Another Fatal Sparring Accident.—George Smith, who was injured by the Australian pugilist, Winters, in a bout at Holborne Hall, London, on December 7th, died three days later.

MANUFACTURE OF VACCINE VIRUS BY THE STATE OF ILLINOIS. — A committee has been appointed by the Illinois State Board of Health to promote legislation by the next General Assembly for the establishment of a State vaccine farm. It will be remembered that within the last year efforts were made to secure such legislation in Massachusetts. These attempts, unfortunately, were not successful.

A New Medical Quarterly.— Teratologia is the name of a quarterly journal devoted to the subject of Antenatal Pathology, edited by Dr. J. W. Ballantyne, of Edinburgh, which has just completed its first volume. The scope of the journal includes all matters relating to antenatal disease and deformity, and the last number contains an interesting article in Italian on "Maternal Erysipelas with Streptococcus Endocarditis in the Fetus." The journal is a novel, and so far interesting and successful experiment in medical journalism.

NAVAL SURGEONS AS NON-COMBATANTS. — Although surgeons in the army and navy are generally considered non-combatants, that fact does not, as pointed out by La Médecine Moderne, protect them from the enemies' bullets. In the naval engagement on the Yalu River, the Japanese lost one hundred men, among whom were two surgeons. A third surgeon was dangerously wounded.

THE TONGUE AS AN INSTRUMENT IN OPHTHALMIC SURGERY.— In Brittany, according to a writer in the Lyon Médical, the tongue is employed in household surgery for the extraction of foreign bodies from the eye. The Chinese at Tonquin are also said to employ the tongue for the application of powdered remedies to the eye. The physicians keep their mouths so clean by frequent washing and chewing the betel-nut, that the tongue is comparatively free from micro-organisms, in fact may be considered a sterile (?) instrument.

BOSTON AND NEW ENGLAND.

ACUTE INFECTIOUS DISEASES IN BOSTON. — During the week ending at noon, December 12, 1894, there were reported to the Board of Health, of Boston, the following numbers of cases of acute infectious disease: diphtheria 121, scarlet fever 55, measles 58, typhoid fever 7.

A BEQUEST TO THE MASSACHUSETTS GENERAL HOSPITAL.—By the will of the late Thomas E. Proctor, the Massachusetts General Hospital, of which he was a trustee, receives \$100,000. This sum is to be held in trust until principal and interest reach the amount of \$400,000, when it is to be expended in erecting a building on the new grounds of the McLean Asylum for the Insane at Waverley.

A SERIOUS COMPLICATION OF DIPHTHERIA.— A death from diphtheria, complicated by Christian science, is reported from Malden, Mass.

SCARLET FEVER IN GOFFSTOWN, N. H.—An epidemic of scarlet fever, is reported as prevalent in Goffstown, N. H. The schools and Sunday-schools have been closed.

THE YALE MEDICAL JOURNAL, a medical magazine, which is to be published monthly from November till June by the students of the Yale Medical School, made its first appearance in November. The first number contains articles on general medical topics, a report of a meeting of the New Haven County Medical Society, together with various notes of local interest.

JOURNAL OF MEDICINE AND SCIENCE.—The first number of the Journal of Medicine and Science, the official organ of the Maine Academy of Medicine, is at hand. It contains an article on "Intestinal Anastomosis," by Dr. S. H. Weeks, of Portland, with discussion by Dr. Gordon and others. It is edited by E. E. Holt, M.D., of Portland, in conjunction with fifty or sixty members of the Academy. The Maine Academy of Medicine was organized on October 29, 1894, with a membership of one hundred and seventy-five.

IMPROVEMENTS FOR THE NAVAL HOSPITAL AT CHELSEA.— A number of changes are reported as necessary by the officer in charge at the Naval Hospital in Chelsea. A coat of soluble glass and German porcelain paints is needed in order to make the walls of the operating room impermeable to dampness and disease germs; and a system of hot-air and needle

baths, to cost about \$1,000, is also recommended. Other improvements called for are a small elevator, to cost about \$2,000; a disinfecting chamber; an electric-lighting system; and provision for securing better drinking-water.

THE HAVERHILL HOSPITAL BOARD. — Several changes have been made of late by the board of trustees of the City Hospital at Haverhill. The hospital board as now constituted consists of Drs. M. D. Clarke, J. F. Croeton, F. W. Anthony, C. E. Durant, Hugh Donahue, G. C. Clement and L. J. Young.

DIPHTHERIA AT NASHUA, N. H. — By order of the board of health, the parochial schools and public library have been closed for the present, and a request has been made that the Sunday-schools be closed and all public entertainments at which children would congregate be discontinued till after the present epidemic. The public schools have been closed until December 17th.

A TABLET TO THE MEMORY OF DR. HORACE Wells.— On December 10th, at Hartford, Conn., a bronze tablet to Dr. Horace Wells, the discoverer of anesthesia by nitrous oxide gas, was unveiled. The tablet commemorates the fiftieth anniversary of Dr. Wells's discovery, which was made on December 11, 1844, when he had the gas administered to himself for the extraction of a tooth. The tablet, which has been placed on the Corning Building, near the corner of Asylum and Main Streets, contains a medallion portrait of Dr. Wells and the following inscription: "To the memory of Horace Wells, dentist, who upon this spot, Dec. 11, 1844, submitted to a surgical operation, discovered, demonstrated and proclaimed the blessings of anesthesia." Two hundred and fifty dentists in this country contributed to the fund for this tablet, which was designed and executed in plaster by Sculptor Enoch S. Woods. In the evening the Connecticut State Dental Society gave a banquet in honor of the event at which speeches were made by Dr. G. T. Colton, of New York, now eighty-one years old, whose administration of laughing gas in this city December 10, 1844, gave Dr. Wells his idea of applying it to the extraction of teeth.

NEW YORK.

RECEIPTS FROM PORTRAIT EXHIBITION.— The exhibition of portraits of women, organized by a number of ladies of society, which has just closed at the Academy of Design, netted about \$20,000 for St. John's Guild and the Orthopedic Dispensary.

THE SETON HOSPITAL FOR CONSUMPTIVES.— The Seton Hospital for Consumptives, under the care of the Sisters of Charity of the House of Nazareth, which has just been completed at Spuyten Duyvil, was dedicated on December 3d by Archbishop Corrigan, assisted by a number of clergymen. The grounds comprise twenty-three acres, and the institution commands a grand view of the Hudson. The frontage of the building is about 200 feet, and its width varies from 100 to 150 feet. Three hundred patients can be ac-

commodated, and the hospital is thoroughly equipped with the most approved appointments. On the fourth floor is an ozone room and on the roof an immense solarium, which has been made attractive by a profusion of plants.

DR. GEORGE A. PETERS, until recently one of the most prominent of New York surgeons, died December 6th, of chronic Bright's disease. Dr. Peters was graduated from the College of Physicians and Surgeons in 1846, and his career was a most successful and interesting one. For the last four years he had retired to a large extent from active practice, but at the time of his death he was still consulting surgeon to the New York, St. Luke's, St. Mary's, and the Woman's Hospital.

MEMORIAL TO DR. PAUL HOFFMAN .- Some of the friends of the late Dr. Paul Hoffman, for many years assistant superintendent of the Public Schools, have determined to start a novel and practically useful memorial in his honor in the shape of a fund to be known as the Hoffman Spectacle Fund. From his observations while occupying the position named, Dr. Hoffman became much interested in the subject of defective eyesight among school children, and for several years before his death he devoted the proceeds of certain literary labors to providing glasses for the correction of the deficient vision of such as whose parents either through poverty or ignorance neglected to procure The movement has been headed by Dr. Frankel, one of Dr. Hoffman's executors, and it is proposed to raise \$200 or \$300 a year for carrying on this work by small subscriptions of from twenty-five cents to one dollar.

DEATH-RATE IN TENEMENT-HOUSES. - During the past four months the Tenement-House Commission, of which Mr. Richard Watson Gilder, editor of the Century, is chairman, and Dr. Cyrus Edson, one of the members, has been working hard in gathering materials for its report to be made to the Legislature on January 1st. For the last month it has been holding public sessions and at one of these, on November 24th, Dr. R. F. Tracy, Deputy Registrar of Vital Statistics, stated that the annual death-rate, where there are from and rear tenement-houses, was 27.66, while the deathrate in single houses was 22.71: Statistics showed that the death-rate was always greater where there were front and rear houses in the same block. He expressed the opinion that the Board of Health should have power to permanently vacate houses unfit for habitation, and that the force of sanitary inspectors should be increased. Instead of 44 police inspectors and 14 sanitary inspectors, he believed that there should be 44 sanitary inspectors and 14 police inspectors.

New Site of the Woman's Hospital. — The new site of the Woman's Hospital, on the west side of Central Park, embraces the entire distance between 92d and 93d Streets, 200 feet, with a depth of 250 feet. The property was negotiated for more than

two years ago, but owing to the difficulty of getting permission from the city authorities to dispose of the present site, at Fourth Avenue and 49th Street, no definite steps were taken in the matter until recently. The hospital is now located on ground given to it by the city over thirty years ago on condition that the hospital maintain 24 free beds, the patients for which are to be designated by the city authorities, and that it must not be used for any other than hospital purposes. In 1892 the Board of Managers first appealed to the Board of Aldermen to be allowed to dispose of the property and use the money for the purchase of a new site farther up town, the reason urged being that the increased noise from the railroad trains passing the hospital had seriously interfered with its work. It was only after a long delay, however, that the desired permission was granted. Mr. Charles C. Haight, the architect of the fine buildings of the Cancer Hospital, at Central Park, West and 106th Streets, was commissioned to prepare the plans for the new institution. They show a group of six buildings, connected by broad galleries, three on each street. The total cost of the buildings will be about \$1,400,000, but, owing to the lack of funds, it has been decided to erect the structure in sections. Among the largest recent donations to the hospital has been \$20,000 from Mrs. William Astor, \$70,000 from Mrs. R. L. Stewart, and \$200,000 from the estate of the late Daniel B. Fayerweather.

Wiscellanp.

THE MEDICAL PROFESSION AND TRADITION.

A CORRESPONDENT of the Occidental Medical Times, writing from Berlin, after describing the formality of conferring medical degrees, is moved to say:

"It is indeed strange how obsequious the medical profession is to tradition. Take as instances the presentation of theses by our graduates in medicine and the administration of the Hippocratic oath at commencement exercises. The thesis presented by the German candidate of medicine usually embodies something original, or, at any rate, it serves as a medium for the report of interesting cases. Not so the theses presented in our country. In the main they are adequate exponents of misguided plagiarism. If limited time is urged in extenuation of this countenanced literary piracy, then it is preferable to discontinue this mere formality, rather than to establish such a precedent for medical writing on the very threshold of the physician's career. One original fact, even though it be the enumeration of wrinkles on the face, is worth more than all the cumbersome articles in our medical journals, which are designed for no other purpose than the concealment of thought. The Hippocratic oath is another barbarism which should be relegated to oblivion.'

If by this we are to infer that each spring the numerous classes of young men about to graduate in medicine are formally made to subscribe to the oath medicine are formally made to subscribe to the oath thippocratic, then there is reason for the stricture laid title of surgeon-general. In May, 1893, he was retired on upon it. But how many men educated even in our account of age, with the rank of commodore.

best medical schools ever heard the oath or know its origin? The history and traditions of a noble profession are not to be lightly thrust aside as of no value; and in the midst of the keen pursuit of knowledge, of the new and scientific medicine, and of bio-chemical therapeutics, it is well to remember that the care of the sick and wounded is older than the microscope, that there were devoted physicians before the days of bacteriology, and that from the first the man who studied medicine and undertook the labor of a physician was held to a higher plane of living, both bodily and intellectually, than his fellow citizens. The long tradition of this character is worth recalling; and it is to the honor of the profession that in its long history it has so seldom and in such few numbers forgotten that noblesse oblige.

PRESIDENT CLEVELAND RECOMMENDS A NATIONAL BOARD OF HEALTH.

In his annual message to Congress. President Cleveland uses the following language in reference to the establishment of a national board of health:

I am entirely convinced that we ought not to be longer without a national board of health or national health officer. charged with no other duties than such as pertain to the protection of our country from the invasion of pestilence and disease.

This would involve the establishment by such board or officer of proper quarantine precautions, of the necessary aid and counsel to local authorities on the subject; prompt advice and assistance to local boards of health and health officers in the suppression of contagious disease, and in cases where there are no such local boards or officers, the immediate direction by the national board or officer of measures of suppression; constant and authentic information concerning the health of foreign countries and all parts of our own country as related to contagious diseases, and consideration of regulations to be enforced in foreign ports to prevent the introduction of contagion into our cities and the measures which should be adopted to secure their enforcement.

There seems to be at this time a decided inclination to discuss measures of protection against contagious diseases in international conference with a view of adopting means of mutual assistance. The creation of such a national health establishment would greatly aid our standing in such conferences and improve our opportunities to avail ourselves of their benefits.

I earnestly recommend the inauguration of a national board of health or similar instrumentality, believing the same to be a needed precaution against contagious disease and in the interest of the safety and health of our people.

DEATH OF DR. JOHN MILLS BROWNE.

JOHN MILLS BROWNE, M.D., ex-Surgeon-General of the United States Navy, died in Washington, D. C., December 7th, aged sixty-three. He was graduated from the Harvard Medical School in 1852, and entered the navy as assistant surgeon in 1853. After seeing service in various ports of both continents, he was commissioned surgeon in 1861, and transferred to the *Kearsarge*, then on duty in European waters, and was on board that vessel during her famous engagement with the Alabama.

In December, 1871, he was commissioned medical inspector, and in 1878 was promoted to the rank of medical director in the United States Navy. In 1888, he was made

Correspondence.

SAFEGUARDS AND GUARANTEES FOR DIPH-THERIA ANTITOXIN.

We have received the following correspondence from the Health Department of the city of New York:

HEALTH DEPARTMENT, NEW YORK, Dec. 7, 1894. HON. CHARLES G. WILSON, President. SIR: T SIR: The accompanying report is hereby approved. The grave consequences following fraud in the preparation of this valuaable remedial agent necessitate prompt and vigorous action on the part of the Board of Health, Steps should be taken at once to supervise in the most careful manner the sale of dipatheria antitoxin in the city of New York. This can only be accomplished by a systematic inspection and scientific examination of the various preparations of antitoxin offered for sale in this city. In event of fraud in the offering of spurious preparations or preparations of doubtful strength, the Board should institute criminal proceedings against offenders. In order to regulate the sale of diphtheria antitoxin in the city of New York, the following resolution is hereby submitted:

Resolved, That Dr. T. Mitchell Prudden, Consulting Physician to the Health Department in the Division of Pathology, Bacteriology and Disinfection, and Dr. Hermann M. Biggs, Pathologist and Director of the Bacteriological Laboratory of this Departand Director of the Bacteriological Laboratory of this Department, be requested to prepare and submit some plan for the determination of the strength and purity of the various preparations of antitoxin which are now or may be hereafter offered for sale in the city of New York, so that the public may have some guarantee that only genuine preparations of antitoxin of proper strength are furnished for sale.

Respectfully submitted,

CYRUS EDSON, Chairman Sanitary Committee.

The above report and resolution were adopted at a meeting held on Wednesday, December 5, 1894.

HEALTH DEPARTMENT, NEW YORK, Dec. 5, 1894.

HON. CHARLES G. WILSON, President. SIR: The great practical importance of the new antitoxin treatment for diphtheria, not only in controlling but in curing the disease, has created a demand for the new remedy so universal and urgent, that the occasional small supplies which can be obtained from the European laboratories are wholly inadequate. It is therefore imperative that without unnecessary delay the preparation of the new remedy should be generally undertaken in this country. It has been already begun by the New York City Health Department in a limited way, and we trust that the requisite means and equipment may soon be furnished to the Department for making the antitoxin in sufficient amount at least for local use.

The preparation of this new remedy requires considerable outlay for laboratories, for the necessary animals and their safe housing and scrupulous care; and above all for the services of competent and experienced bacteriologists or specially trained experts. The efficiency of the remedy, and the security of those to whom it is administered from any possible danger in its use, depends in the most intimate way upon the skill and reliability of those engaged in its manufacture. Careful and delicate tests are required at every stage of its preparation. The strength of each lot of the remedy must, when it is finished, be determined in the most exact way by those in command of the necessary special skill and experience. It is one of the distinguishing characters of this remedial agent, that its greatest effi-ciency is obtained only when it is administered in the earlier stages of the disease, and then in doses possessing a strength absolutely to be relied upon. Should the material used be for any reason deficient in healing power through error, carelessness or fraud in its preparation, time may be lost, so precious to the patient, that it may involve his life.

The antitoxin serum when ready for use is a yellowish fluid without any especially distinguishing or characterizing appearance; to the eye resembling the clear, yellowish fluid fence in case of assault. I have been hit in about every which separates from blood when it clots, from which it manner in which a fair blow can be struck — whether

can be distinguished only by exact tests of its curative and protective value on animals.

The new remedy will be, at the best, rather costly, on account of the time required for its preparation many weeks at least - the cost of material and animals and of expert services.

At present, the market price of the antitoxin is unduly great, and probably will be so for some time to come on account of its scarcity and the great demand for it.

It follows from what has been said that it is of the utmost importance to those who use this remedy that there should be some reliable guarantee for every preparation placed upon the market that it has been prepared by competent persons, and that in every case it possesses the requisite purity and power. The preparations now occasionally furnished in this country in small quantity by the German Pharmaceutical Houses, Schering and the Farbwerke (Hochst-am-Main), have specific guarantees as to strength and purity by bacteriologists of universally recognized skill and experience. Unless some such security is afforded, it would be quite easy for unscrupulous persons willing to commit such a crime, to place on the market small bottles of yellowish fluid labelled "antitoxin," containing an inefficient amount of the healing agent, or even none at all, and for a time at least profit by the extraordinary demand for it, perhaps at the cost of life and at the risk of discrediting a most potent and beneficent remedy.

That this is not a merely fancied menace to the welfare of those stricken with this dreaded disease, and so often the wards of the Department of Health, is shown by the fact that already in the city of New York several different preparations of alleged diphtheria antitoxin, said to have been prepared in this country, and wholly, so far as we can learn, without proper guarantee of efficiency, have been furnished and used for the treatment of diphtheria. One of these preparations has been already subjected to the necessary crucial tests by the Department and found wholly inefficient and inert.

While we suggest its importance, we are not prepared at the moment to recommend in detail a definite form of guarantee of purity and adequate strength in this remedy such as would be practicable and desirable for the protection of the public against carelessness or fraud. But we call your attention to the matter at this early period in the use of diphtheria antitoxin in the hope that at least a warning of the medical profession and the public against spurious and unguaranteed preparations of this remedy, if not more drastic measures, may seem to you wise and useful, and appropriate to the functions of this Department as a guardian of the Public Health. Respectfully submitted,

HERMANN M. BIGGS, M.D., Pathologist, and Director of the Bacteriological Laboratory.

T. MITCHELL PRUDDEN, M.D., Consulting Physician to the Health Department in the Division of Pathology, Bacteriology and Disinfection.

PHYSIOLOGY OF THE KNOCK-OUT BLOW.

TROY, N. Y., December 4, 1894.

MR. EDITOR: — Dr. Walton's explanation of some of the disasters in "sparring" is borne out by a number of facts familiar to most sparrers. When I was first taught to spar, nearly thirty years ago, a blow was taught, and I presume is still, in which after parrying a left-hand straight blow at the face a cut was delivered with the right on the left side of the neck with the inner edge of the outstretched right hand. The object was to land upon the muscles of the neck and avoid bony prominences. The amount of force which could be employed was necessarily very limited, but the execution done when the reply was properly made was so terrific that the blow was barred even with well padded gloves in ordinary sets-to. Many diligently practised it in the routine exercises so as to employ it as a destraight leads, cross-counters or swinging round arm blows — but the memories of a couple of these cuts received in practising abide with me yet. The pain was awful, and the faintness and sense of dissolution only equalled by an attack of angina pectoris. Any one can easily convince himself of the truth of this by a short, sharp cut with the inner edge of the hand across the middle of the sterno-mastoid. If the muscles are not very tense, it will require but a slight blow to make the experimenter "see stars." Here, of course, there can be no question of brain concussion. The punishment must be due to direct action on the nerves or to compression of the vessels of the neck. it is due to the former seems more probable when its effects are compared with straight blows on the "mark" (epigastrium). If one sees a blow coming for the mark and has time to contract the abdominal muscles, the force is distributed laterally by the unbroken arch of the abdominal muscles, and the punishment, in my experience with heavy weights, comparatively slight. If, however, the recipient is taken unawares, and the abdominal muscles are but slightly contracted, the shock from even a weak blow is sickening.

Again, there was formerly taught a "stop" to prevent an opponent clinching, which consisted in a quick, short cut across the larynx with the inner border of the hand. If well and quickly done, this literally "took the starch" out of the rusher. In this latter case there can be no question of concussion, and the time was too brief for suffocation to be an element in producing the resulting weakness. Sparring is a very safe and manly exercise if practised, as it always should be, in a fair and gentlemanly manner. No other exercise of which I know gives such play to all the muscles, such command over the feet and legs and requires such command of one's self. Hard blows may and ought to be struck; but if the hand is not tightly clinched, and proper gloves are worn, no damage will be done. The greenhorn should be early ingrained with the teaching that "knocking out" is no part of the practice of the manly art, and that whilst he should learn how to land very forcibly upon the mark, or on the neck by cross-counter, crossparry or side-step, they should never be sent with power or with the clenched fist, unless he is willing to plead self-defence as an excuse for their results. Very truly yours, WILLIAM WOTKYNS SEYMOUR.

TESTIMONIAL TO SIR JOSEPH LISTER.

MR. EDITOR: - Sir Joseph Lister having recently retired from active hospital and teaching work, the occasion has been thought appropriate for presenting him with a testimonial of the esteem in which he is held by his former colleagues and pupils; and committees have therefore been formed in Glasgow, Edinburgh and London for the purpose of raising the necessary funds.

It is proposed that the testimonial shall take the form of a portrait. Subscriptions have been limited to two guineas, and it is hoped that sufficient funds will be collected to permit of some memento of the occasion being presented to each subscriber of that amount.

As there are probably many surgeons in the United States who may wish to join in the movement, but whose names and exact addresses it has been difficult to ascertain, I should be glad if you would permit me to state that subscriptions may be sent to me at 29 Weymouth Street, Portland Place, London, W., England, or to one or other of the following gentlemen who have kindly consented to act as treasurers, namely, Dr. James Finlayson, 4 Woodside Place, Glasgow; Professor Chiene, 26 Charlotte Square, Edinburgh; Professor William Rose, 17 Harley Street, London, W., England; Dr. Malloch, 124 James Street, South, Hamilton, Ontario, or J. Stewart, M.B., 37 South Street, Halifax, Nova Scotia.

I have the honour to remain, sir, Yours faithfully, J. FREDK. W. SILK, Honorary Secretary.

P. S. — Two guiness are about \$10.23.

METEOROLOGICAL RECORD,

For the week ending December 1st, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:-

	Baro- meter		eter		Re	lati nidi				Velo		We,	th'r.	in inches.
Date.	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Rainfall in in
825	29.76	36	39	34	82	80	81	W.	Ŋ.	16	16	Ŋ.	Q.	.10
M26 T27	30.20 29.66	28 38	30 53		64 60	46 58	55 59	N.W. S.W.	s.w.	14 24	8	C. R.	O. C.	.01
W28 T29	30.12	28 22	33 26	23 18	67 48	40 38	54 43	W. N.W.	N.W.	19 22	18 14	C.	C.	ĺ
F30	30.58	23	31	15	56	93	80	N.E.	S.E.	5	4	N.	0.	.03
S 1	30.28	30	36	25	89	93	91	N.W.	w.	5	6	N.	, C.	.02
	30.18		35	23	-	l	66			-			1	.26

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, DECEMBER 1, 1894.

		in de	ttbs	2	Per	centa	ge of d	eaths f	rom
Oitles.		Estimated population.	Reported deaths in each.	Deaths under five years.	Infectious diseases.	Acute lung diseases.	Typhoid fever.	Diphtheria and croup.	Soarlet fever.
New York .	•	1,956,000	693	226	15.12	46.56	1.26	9.66	1.12
Chicago		1,600,000	! —		-	_	l —	_	! —
Philadelphia		1,139,457	412	129	17.76	10.08	1.92	13.44	.96
Brooklyn .		1,013,000	344	116	14.70	15.60	1.50	10.50	.30
St. Louis		540,800	-	_	_	_	_	_	-
Boston		501,107	231	71	24.08	16.34	3.02	18.06	.86
Baltimore .		500,000	; —	. —	l —	_	_	_	_
Washington		285,000	92	23	11.88	2.16	2.16	5.40	4.32
Cincinnati .		325,000	112	32	15.13	16.02	3.56	8.01	-
Cleveland .		325,000	93	34	26.75	7.49	1.07	1.07	18.19
Pittsburg .		272,000	_	—	-	_	l —	_	-
Milwaukee .		265,000	i —	-	-	i –	_	_	_
Nashville .		87,754	23	5	13.05	4.35	4.35	_	-
Charleston .		65,165	89	7	7.68	2.56	2.56	_	_
Portland		40,000	-	_	_		_	_	_
Worcester .		100,410	32	11	12.52	18.78	3.13	3.18	6.26
Fall River .		92,288	27	10	18.50	7.40	14.80	3.70	-
Lowell		90,613	29	16	13.80	27.60	6.90	6.90	_
Cambridge .		79,607	17	3	84.8		_	5.88	_
Lynn		65,123	24	1	12.48	4.16	_	_	12.48
Springfield .		50,284	18	4	7.69	30.76	=	_	-
Lawrence .		49,900	છ	8	_	-	_	-	_
New Bedford		47,741	17	7		5.88	_	–	_
Holyoke		43,348	22	10	13.66	27.33	_	_	_
Brockton .		33,939	6	_	16.66	-	-	16.66	_
Salem		33,155	7	2		-	_	-	_
Haverhill .		32,925	6	0	16.66	-	_	-	_
Malden		30,209	5	2	20.00		-	20.00	_
Chelsea		29,506	18	1	22.24	16.66		22.22	_
Fitchburg .		29,388	8	2	25.00	_	12.50	12.50	_
Newton		28,837	5	Ű	40.00		_	40.00	_
Gloucester .		27,293	_	_					_
Taunton		26,954	9	2	33.33	22.22	11.11	22.22	_
Waltham .	•	22,058	. 5	2	20.00	20.00		20.00	_
Quincy		19,642	13	6	58.83	7.69	7.69	46.14	_
Pittsfield .		18,802	-	_	-	_	_	-	_
Everett		16,585	4	0	_		-	-	_
Northampton		16,331	2	0	50.00	=	70.00		_
Newburyport	٠ ا	14,073 10,920	2	0	00.00	_	50.00	=	_
Amesbury .									

Deaths reported 2,415: under five years of age 752; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 401, consumption 313, acute lung diseases 303, diphtheria and croup 250, typhoid fever 50, scarlet fever 37, diarrheal diseases 28, malarial fever 9, whooping-cough and erysipelas 8 each, measles 5, cerebro-spinal meningitis 3, small-pox 2.

From diarrheal diseases New York 7, Cincinnati and Fall River 4 each, Brooklyn 3, Philadelphia, Washington and Lowell 2 each, Boston, Cleveland, Providence and Springfield 1 each. From malarial fever New York 4, Brooklyn 3, Nashville and Charleston 1 each. From whooping-cough New York and Boston 3 each, Philadelphia 2. From erysipelas New York 3, Brooklyn 2, Philadelphia, Cleveland and Haverhill 1 each. From measles Holyoke 3, New York 2. From small-pox New York and Philadelphia 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending November 21st, the death-rate was 17.3. Deaths reported 3,468; acute diseases of the re-piratory organs (London) 261, measles 109, diphtheria 75, fever 57, diarrhea 38, whooping-cough 35, scarlet fever 24, small-pox (Birmingham 5, Liverpool 1) 6. The death-rate ranged from 11.9 in Plymouth to 24.9 in Sunderland; Birmingham 19.3, Bolton 18.1, Croydon 16.8, Hull 18.4, Leeds 21.1, Leicester 20.7, Liverpool 21.1, London 15.9, Manchester 20.6, Newcastle-on-Tyne 16.8, Nottingham 12.6, Portsmouth 17.1, Shefileld 15.3, West Ham 15.5.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 1, 1894, TO DECEMBER 7, 1894.

Leave of absence for four months, on surgeon's certificate of disability, with permission to leave the Department of Dakota, is granted FIRST-LIBUT. ALEXANDER S. PORTER, assistant surgeon.

Leave of absence for four months, to take effect on or about January 20, 1895, with authority to go beyond the sea, is granted CAPTAIN WALTER D. McCAW, assistant surgeon.

The extension of leave of absence on surgeon's certificate of disability granted FIRST-LIEUT. HENRY R. STILES, assistant surgeon, is further extended two months on account of sickness.

Leave of absence for one month, to take effect on or about December 10, 1894, is granted FIRST-LIEUT. CHARLES LYNCH, assistant surgeon, with permission to apply for an extension of one month.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING DE-CEMBER 8, 1894.

 $\mathbf{G}.$ A. Bright, medical inspector, ordered to the Navy Yard, New York.

S. H. DICKSON, surgeon, detached from the U. S. Receiving-ship "Dale" and wait orders,

DWIGHT DICKINSON, surgeon, detached from the U. S. Receiving-ship "Richmond" and to the U. S. S. "Minneapolis."

M. F. GATES, passed assistant surgeon, detached from the U. S. "Receiving ship "Richmond" and to the U. S. S. "Minne-

HARVARD MEDICAL SCHOOL. EVENING LECTURES.

The next lecture will be given on Thursday evening, December 20th, at 8 o'clock, by Dr. J. H. McCollom. Subject, "Diseases Dangerous to the Public Health." Physicians are cordially invited.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. - A regular meeting of the Society will be held at the Medical Library, 19 Boylston Place, on Monday, December 17, 1894, at eight o'clock, P. M.
Dr. W. J. Otis: "The Clinical Features and Treatment of

External Piles." Discussion opened by Dr. S. J. Mixter.
Dr. F. B. Mallory: "A Case of Actinomycosis." Discopened by Drs. W. F. Whitney and H. L. Smith. Discussion JOHN T. BOWEN, M.D., Secretary.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLE DISTRICT. The Section for Clinical Medicine, Pathology and Hygiene will
meet at 19 Boylston Place, on Wednesday evening, December

19th, at 8 o'clock.

Papers: "Report of Three Cases of Brain Tumor with Autopsies," Dr. W. N. Bullard.

"Criticism on the Usual Method of Chest Measurements at Life Insurance Examinations and Stethokyotographical Studies of the Bilateral Dilation of the Chest," Dr. Richard Hogner.

Several gentlemen have been especially invited to take part in the discussion of these papers.

JOHN L. AMES, M.D., Secretary.

cember 6th.

ber 10, 1894, age seventy years.

Natick, December 9, 1894, age seventy-one years.

city, December 6, age fifty-nine. He was a surgeon in the city, December 0, age hity-nine. He was a surgeon in the regular army during the war and was medical purveyor of the Army of the Potomac under General Meade. He was the founder, and for many years the president of the Botanical Club of Philadelphia, and a member of the Philadelphia Academy of Natural Sciences.

BOOKS AND PAMPHLETS RECEIVED.

Proceedings of the American Microscopical Society, Sixteenth Annual Meeting held at Madison, Wis., August 14, 15 and 16, 1893, Vol. XV.

Landmarks in Gynsecology. By Byron Robinson, B.S., M.D., Professor of Gynsecology in the Chicago Post-Graduate School, etc. Two volumes. Detroit: George S. Davis. 1834.

The Hot Springs of Arkansas, An Historical and Legendary Account of the Famous Health and Pleasure Resort. St. Loui: General Passenger Department, Missouri Pacific Railroad. 1894.

China Imperial Maritime Customs. Special series No 2, Medical Reports for the half-year ended March 31, 1891, 41st Issue. Shanghai: Published by order of the Inspector General of Customs. 1894.

Textbook of Nervous Diseases; Being a Compendium for the use of Students and Practitioners of Medicine. By Charles L. Dana, A.M., M.D. Third edition, with 210 illustrations. New York: William Wood & Co. 1891.

A Textbook of Pathology, Systematic and Practical. By D. J. Hamilton, M.B., F.R.C.S.E., F.R.S.E., Professor of Pathology, University of Aberdeen. Copiously illustrated. Vol. II. Parts 1 and 2. London: Macmillan & Co. 1894.

Paraxanthin as a Factor in the Etiology of Certain Obscure Nervous Conditions. Uric Acid Leukomains as Factors in the Etiology of Migraine and Kindred Nervous Diseases. By B. K. Rachford, M.D., of Cincinnati, O. Reprints. 1894

The Operative Treatment of Fistula in Ano. The Treatment of Anal Fissure or Irritable Ulcer of the Rectum. The Non-Operative Methods of Treating Anal Fissure or Irritable Ulcer of the Rectum. By Lewis H. Adler, Jr., M.D. Reprints. 1893-93-94.

A Manual of the Practice of Medicine, Prepared especially for Students. By A. A. Stevens, A.M., M.D., Lecturer on Terminology and Instructor in Physical Diagnosis in the University of Pennsylvania, etc. Third edition, revised, illustrated. Philadelphia: W. B. Saunders. 1894.

A Case of Chronic Peritonitis, with Intestinal and Abdominal Fistules; Enterorrhaphy; Recovery. Coliototomy for Bilateral Pyosalpinx, followed Four Days Later by Appendicitis; Operation; Recovery. A Case of Bilateral Ovarian Fibro-Sarcoma. By Frederick Holme Wiggin, M.D. Reprints. 1894.

A System of Oral Surgery: Being a Treatise on the Diseases of and Surgery of the Mouth, Jaws, Face and Teeth, and Associate Parts. By Dr. James E. Garretson. Illustrated with numerous wood-cuts and steel plates. Sixth edition, thoroughly revised with additions. Philadelphia: J. B. Lippincott Co. 1895.

Practical Manual of Diseases of Women and Uterine Therapeutics for Students and Practitioners. By H. Macnanghto-Jones, M.D., M.Ch., M.A.O. (Hon. Caus.), Fellow of the Royal Colleges of Surgeons of Ireland and Edinburgh, etc. Sixth edition, revised and enlarged. London: Baillière, Tindall & Cox. 1894.

A Manual of Modern Surgery, General and Operative. By John Chalmers DaCosta, M.D., Demonstrator of Surgery, Jefferson Medical College, Philadelphia, etc. With 188 illustrations in the text and 13 full-page plates in colors and tinta, aggregating 276 separate figures. Philadelphia: W. B. Saunders. 1894.

A Treatise on the Diseases of the Ear, Including the Anatomy and Physiology of the Organ, together with the Treatment of the Affections of the Nose and Pharynx which Conduce to Aural Disease. By T. Mack Hovell, F.R.C.S., Edin., M.R.C.S., Eng., Aural Surgeon to the London Hospital, etc. London: J. & A. Churchill 1804 Churchill. 1894.

Essentials of Diseases of the Skin, Including the Syphilodermata, arranged in the form of Questions and Answers, Prepared especially for Students of Medicine. By Henry W. Stelwagon, M.D., Ph.D., Clinical Professor of Dermatology in the Jefferson Medical College, etc. Third edition, revised and enlarged, with 71 letter-press cuts and 15 hanf-tone illustrations. Philadelphia: W. B. Saunders. 1894.

GEO. A. Peters, M.D., of New York, died in New York, December 6th.

JOSEPH MANNING, M.D., M.M.S.S., died in Rockport, December 10, 1894, age seventy years.

GEORGE JAMES TOWNSEND, M.D., M.M.S.S., died in South Natick, December 9, 1894, age seventy-one years.

J. Bernard Beinton, M.D., of Philadelphia, died in that

Tecture.

THE MILITARY MEDICAL OFFICER IN PEACE AND WAR.1

BY JOHN VAN RENSSELAER HOFF, Major and Surgeon, United States Army.

(Continued from No. 24, p. 575.)

In our own army up to 1861 the work pertaining to the interior economy of military hospitals was, for the most part, done by men detailed on "extra duty" from the line of the army. Their connection with the Medical Department was of the most temporary character, and they no sooner became useful than they were returned to their companies, and others, uninstructed, detailed in their stead.

The logic of the situation forced the organization of the ambulance corps during the War of Secession, in spite, strange to say, of the most determined opposition; and when organized, its work was so well done that medical officers thereafter were not constrained to report, as in the early days of the war, when the surgeon-general wrote, "In no battle yet have the wounded been properly looked after; men under the pretence of carrying them off the field leave the ranks, and seldom return to their proper duties." In a letter written in 1862 he reports that "the frightful state of disorder existing in the arrangements for removing the wounded from the battle-field; the scarcity of ambulances, the want of organization, the drunkenness and the incompetency of the drivers, the total absence of ambulance attendants are now working their legitimate results." Speaking of the second battle of Manassas, in which the actual number of casualties was never known, he says, "Up to this date (September 7, 1862), 600 wounded still remain on the battle-field, in consequence of the insufficiency of ambulances and the want of a proper system for regulating their removal, in the army of Virginia; many have died of starvation, many more will die in consequence of exhaustion, and all have endured torments that might have been avoided."

Dr. Agnew, who devoted so much time to the organization and working of the United States Sanitary Commission, estimated that 500 lives were lost from want of proper transport at the battle-field of Antietam alone.

It must be understood that every effort on the part of the medical authorities was made to meet the demands upon them; but the history of the early days of the War of Secession shows that they were hampered and opposed in all directions by the military authorities, the very class from which the Medical Department expected the greatest assistance.

The want of an efficient ambulance organization, which had been so repeatedly asked for by the surgeongeneral, soon so strongly attracted public attention, that the most energetic efforts were made to remedy the defect, and in course of time the ambulance system of our army became thoroughly efficient. With the close of the war, however, the Medical Department was content to return to ante-bellum ways, and the service of the hospitals was again performed by extraduty details from the line of the army.

The law of 1887 organizing the hospital corps,

though defective in detail, builded better than it knew, and was a step of vast importance to the Medical Department. The hospital corps is a body of sanitary soldiers, at this time some 800 in number, whose duties pertain to the care of the sick and wounded. Its members are enlisted from civil life, or transferred from other branches of the service, and pass through a six months' course of training in a company of instruction before being assigned to the various hospital corps detachments serving at every post throughout the country. Their training in the company is of two kinds, military and technical.

The military training is identical with that of other recruits, the chief object of which is discipline. In drill they are taken through the school of the company, in which they are required to be thoroughly proficient; they are taught the manual of arms and use of the rifle, for though they will ordinarily neither carry nor use firearms, it is held that no man can be a soldier who is unfamiliar with their use, and men of the hospital corps must be soldiers. It goes without saying that the company of instruction takes care of itself, cooks its own food, polices its own quarters and grounds, etc.; in fact, performs the numberless minor duties required of all military bodies.

The technical training consists of lectures, recitations, demonstrations, and practical work in simple anatomy, physiology, nursing, cooking and pharmacy; bearer drill with hand litter and ambulance, improvised methods, etc.; first aid and bandaging appliances of the Medical Department in post and field; field work, -pitching, striking, loading and unloading field hospitals, their management, etc.; care of horses, stables, etc.

Of course, this is the merest outline; but it gives some idea of the work required in the forming of a When sufficient proficiency has been sanitary soldier. reached, the men are relieved from the company and assigned to post detachments, where their practical work begins as nurses, cooks, dispensers, clerks, ambulance-drivers, attendants, etc.

It will be observed from the foregoing that the hospital corps of the United States army is really a military training-school for male nurses, in which a very high character of training is given, the tendency of which is to develop the physical, intellectual and moral qualities of its members. Moreover, it equips a man with special knowledge of great usefulness to him should he, at the end of his enlistment, return to civil life, while should he remain in the service, he will be in the line of promotion to the most valuable positions attainable by enlisted men in the United States Army.

In addition to the hospital corps, and supplemental to it, there are detailed in every company in the army four privates, known as company bearers, who are instructed in first aid and bearer work, and are sani-They belong to the combatant tary emergency men. force, and are only used when the hospital corps is not sufficiently numerous to meet the demands of an engagement.

The practical training of the non-commissioned officers and men of the hospital corps, must of necessity fall upon the post medical officers. The men who come from the companies of instruction are well informed theoretically, but are without practical experience; hence it becomes an important part of the duty of medical officers to carefully instruct the men of the corps in all matters pertaining to their work

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A lecture read before the Medical School of Harvard University, October 18, 1894.

The battle was fought August 29, 1862.

and duties. In order to do this there must be laid down a well-considered scheme of hospital organization, with all parts of which the men are gradually made familiar. There can be no specialists in the hospital corps; each man should be equal to the performance of any duty that an emergency might place upon him, and while, of course, it is recognized that no one man can do all things equally well, he must, at least, be able to do his full duty in any position.

Army Regulations recognize the necessity for the instruction as above set forth, but it is to be regretted that so much of its character and of the time devoted to instruction should be left to the personal equation of the medical officer himself.

The two paragraphs which treat specially of instruction are 1575 and 1569. The first says, "All available men of the hospital corps shall be instructed, under the supervision of the senior medical officer, for at least four hours in each month . . . in the duties of litter-bearers and the methods of rendering first aid to the sick and wounded." The latter states that, "Members of the hospital corps will be instructed by the senior medical officer of the post, at such times, in addition to those prescribed in paragraph 1575, as he may deem necessary."

The result of this latitude is that while the men of some detachments have forty hours of systematic instruction each month, in other detachments but four hours of instruction are given. It is readily imagined that the officer who devotes the least time to his men has the least efficient detachment. That the regulations, however, do contemplate the giving of very thorough instruction is shown by the requirements for the making and promotion of non-commissioned officers.

(Par. 1568) "Privates who have served one year or more in the hospital corps, and have displayed particular merit, will be recommended to the surgeongeneral for promotion, by the senior medical officer of the command; from those thus recommended, acting hospital stewards will be appointed."

(1557) "A candidate for the position of acting hospital steward must pass a satisfactory examination as to his physical condition, moral character, and general aptitude, and in the general principles of arithmetic, including decimal fractions and the rules of proportion, in orthography and penmanship, the Articles of War and regulations affecting enlisted men, pharmacy, care and use of meteorological instruments, and hospital and field appliances furnished by the Medical Department; the methods of rendering first aid to the sick and wounded and the ordinary modes of cook-

(1556) "Candidates for promotion to the grade of hospital steward (who must have served at least one year as acting hospital stewards) must pass a satisfactory examination in the subjects required of acting hospital stewards, and also in the elementary principles of hygiene, including ventilation, heating and disinfecting, the principles of materia medica, therapeutics and minor surgery, and the administration of anesthetics. They must also possess a thorough knowledge of the regulations of the Medical Department."

Thus it will be seen that if there are to be any noncommissioned officers in the hospital corps, medical officers must bestir themselves to make them. hour each day for five days weekly, theoretical instruction, is the least that should be given.

pany of instruction, only in the detachment they are gone into more deeply.

The instruction of the hospital corps adds largely to the labors of the medical officer, but its results pay him many fold in the successful conduct of his depart-

From the foregoing résumé of the work of the military medical officer in times of peace, it will be seen that the medical schools of our country are doing only a part of their duty in preparing the future medical officers of our active armies; for, it is needless to say, those medical officers are the civil practitioners and We of the regular establishment students of to-day. will be but a very drop in the bucket when the time comes, and it surely will, to martial this great nation in arms. To-day, as you know, throughout our land the rudiments of the art of war are being taught in our schools and colleges by over a hundred officers of the line of the army specially detailed for this important work. Everywhere people are awakening to the desirability of following Boston's excellent example, and are having their children instructed in military drill. It is the first symptom of the epidemic of diseases and injuries which we call war. Perpetual peace is a dream! Think you that the military medical officer, like a poet, is born, not made? Think you that the civil practitioner of to-day can become the medical officer of to-morrow by the mere enactment of a law to that effect? No; a thousand times, No! It takes just as much special education to make the medical man a medical officer, as to make any other civilian a combatant soldier, be he officer or man. how much are we doing to educate our medical men for the part they must play when war comes? And upon whom will rest the moral responsibility when they fail, as fail they must?

As has been said, all the duties performed by the army in peace time, are simply a training for war, a sort of unceasing rehearsal for a great tragedy which sooner or later will be presented.

The duties of the Medical Department in war pertain to the care of almost numberless thousands of sick and wounded under conditions so peculiar that they have no analogue in civil life. In order to the proper performance of these duties a peculiar and highly specialized medico-military organization has been found necessary, the object of which is to free the front of an army from all sick and wounded, and the immediate transfer of all serious cases to hospitals more or less distant from the theatre of war. Thus it will be seen that the great problem is the getting of the patient, in as good condition as possible, off the field, and into his place of permanent treatment as soon as may be. To accomplish this result there are in the several great armies of the world, sanitary organizations, the same in principle but differing in details, depending upon the particular army. In the great Continental armies which are all standing at the "ready" watching every movement of the neighboring nations, with everything - down to the last strap - prepared for instant service, certain of the work of the direct management and instruction of the field sanitary personnel is taken off the already overweighted shoulders of the Medical Department, and its duties are more closely confined With these the means to strictly professional work. and method of transportation, including personnel and The subjects material, are under the direct command of non-medical have already been outlined in the course in the com- officers. And the advantages of such an arrangement

under existent conditions are certainly many, the chief of which is that medical officers are comparatively few and correspondingly precious, and therefore should be permitted to devote themselves to work that requires special aptitude, training and experience, possessed by only a small number in any community. But such an arrangement is only permissible, or even possible, in an actual organization of the most perfect character. In an army most of which is on paper, as is our own, and the complete working of which will only be shown under conditions of actual service, whatever sanitary organization there is must of necessity be wholly the creature of the Medical Department.

I will venture to draw a crude outline of a war scheme more or less akin to what ours must of necessity become. As previously stated, permanent military hospitals differ in no essential from the great civil hospitals which abound throughout our country, and with the management of which you are all more or less familiar. As, however, the sanitary department of an army is responsible for the ill and injured not only after they have been finally received into the permanent hospitals, but from the moment and place of their fall, wherever that may be, we must consider what is meant by ambulance aid in active service, assuming as a matter of course, that you know what becomes of the patient after he enters the hospital. Ambulance organization, equipment and transport mean the general arrangements by which first aid and proper transport are given to the soldier from the time of his attack until he reaches a permanent hospital of some kind. In the accomplishment of his journey three stations are provided, on and contiguous to the battle-field.

(1) The collecting station, usually established in the rear of each regiment by the medical officers on duty therewith, who are assisted (in our service) by four men, detailed from each company, called company-bearers. This station is established as nearly as practicable in rear of the regimental reserves, and is consequently about one-third of a mile back of the skirmish line.

The company-bearers collect the wounded on the skirmish line and carry them to the collecting station, where they receive the most necessary and temporary assistance. Thence they are transported to the dressing (ambulance) station by a special organization called a bearer company.

The dressing station, a mile to the rear of the fighting line, is really the central sanitary feature of the field; it is here that the ambulance personnel and material rendezvous; it is here that the wounded receive their first careful examination and treatment; here urgent operations are performed and permanent dressings applied. Thus it will be seen that upon the selection of a suitable location for the dressing station very much depends.

The third station in the journey is the field hospital. It is located sufficiently far to the rear to be as nearly as possible absolutely free from disturbance, usually three or four miles. It is to this hospital that the wounded are sent, generally by ambulance from the dressing station. Of course, it is understood that the field hospital is mobile, its tentage, furniture, etc., being when en route, packed in wagons.

From the field hospital the wounded are transferred to the "stationary" hospitals established on the theaof operations, and are finally distributed to the various military general hospitals located throughout the

How many of the latter there may be is shown by the fact that on December 17, 1864, the capacity of the military general hospitals of the United States was 118,057 beds, of which number 83,400 were occu-

All the mighty detail involved in this, of course, can only be alluded to here; but not a word of it, so far as I know, is taught in any medical school in our broad land.

Who of my hearers, unless he be, or has been, a military medical officer, may I ask, knows anything of what has here been outlined?

A distinguished medical officer has said: "With surgery and medicine you are admittedly familiar, their practice in military life does not differ from their practice in civil life, save in the circumstances The ever-present necessity which surround them. with the medical officer is a comprehensive knowledge of military affairs.

"No other officer of the army is required to be individually familiar with the duties of every other military department in addition to his own; and yet this is the task the sanitary officer must master if he wishes to be successful in his duties in the field.

"Imagine, if you please, that we are to-day at war with a foreign nation, and have an army of occupation in the field of a hundred thousand men. This army is necessarily made up of volunteers [for in time of war the regular army is but a nucleus, or color-guard of the fighting force]. Its sanitary department consists of 2,600 officers and men. Under ordinary circumstances 5,000 men are constantly sick or wounded, while after a battle the non-effective list is swelled to 10,000. An accident of date of commission may make any one of you, who has in the mean time entered the service in defence of our country, the senior medical officer of this army.

"What would you do after reporting to the commanding-general and finding yourself face to face with the responsibilities of such a position? There is no time to learn and no one to advise you; each branch of the service has all it can do to look after itself and anyway knows nothing about yours. You are practically alone, with the knowledge that each day of unaccustomed field life will, slowly but surely, add to the non-effective list. You also know that there must quickly be a fight, involving a necessity for the care of an additional ten per cent. of wounded. The efficiency of that army, the care of its sick and wounded. and your own reputation, depend upon your doing the right thing then and there.'

How often has it been said, "We did it before, and we can do it again." True, but at what a cost in blood and treasure!

The medical records of the Union Army in the Civil War account for over six million cases, of which number 93,969 died from wounds and 210,400 from disease. The Medical Department disbursed, between the years 1861 and 1866, nearly fifty million dollars, which, of course, was but a small part of what was actually spent on our sick and wounded.

Do the medical schools owe nothing to the country when all other schools are preparing the youth of the land for its defence? Is military sanitation the comtre of war, thence to the "base" hospital at the base mon heritage of our profession, known intuitively, and not requiring to be learned? Will not Harvard, always in advance, ponder these important questions?

In Great Britain to-day there are organized in the various medical schools, bearer companies, made up of medical students, through the instrumentality of which the students are at the same time learning the rudiments of military sanitation, and enjoying themselves in their clubs, which these companies really are. The State, appreciating the immense value of these organizations as a means to an end, the dissemination of medico-military knowledge, gives them every possible encouragement; and the healthy emulation between the different organizations is the best evidence of the individual interest taken therein.

It is high time that our own great medical schools should realize the obligation they are under to do their part in preparing for the public defence, and to meet that obligation by establishing efficient courses of instruction in military sanitation, bearing in mind the fact that this specialty includes not alone military medicine and surgery, but everything pertaining to the prevention and cure of disease and injury under the peculiar and varied conditions of military life.

Original Articles.

SOME POINTS IN THE MODERN TREATMENT OF TYPHOID FEVER.¹

BY FREDERICK C. SHATTUCK, M.D., Jackson Professor of Clinical Medicine in Harvard University.

THE subject on which I have the honor of addressing you to-day is one of great and living interest, appealing to almost every physician in active practice. I therefore cheerfully accepted the selection which was made for me, although I cannot flatter myself that I have anything especially new to offer you.

There is perhaps no other of the common acute infectious diseases which has such wide limits of variation as typhoid fever, and at the same time may present so many complications. A due regard for your patience, therefore, seems to make it desirable to dwell upon a few of the more important factors of the treatment of the disease rather than to attempt to cover the whole ground.

The points, then, to which I shall practically confine my remarks are: (1) Diet; (2) Intestinal Antisepsis and the Management of the Bowels; (3) Treatment of the Pyrexia, as for convenience it may be termed, though, as will be seen later, the term is in no way descriptive.

Before we consider these points in turn, let us generalize a little. It is a cardinal maxim in treatment, as applicable to typhoid fever as other diseases, that above all things we should do no harm. Again, we must never forget that typhoid involves two things which may make more or less contradictory therapeutic demands. There is, in the first place, the duration and general character of the disease which brings in its train the almost certainty of tedious convalescence, the danger of death from exhaustion. In the second place there is the constant local lesion, the intestinal ulceration, the extent and depth of which we have no means of estimating or even of inferring. We know, however, that several weeks may be needed for cica-

¹ Read before the Vermont Medical Society, at Montpelier, October 11, 1894.

trization after the fever has subsided. The great dangers from the intestinal lesion are, of course, peritonitis and hemorrhage.

Peritonitis from rupture of a mesenteric gland is rare and practically beyond our power to influence in any way. The great importance of early diagnosis must also be mentioned, on account of its bearing on treatment. Undoubtedly one of the causes for the high mortality, especially in urban hospitals, is the late period at which many cases are received. The disease itself, with its gradual and insidious onset and long course, is exhausting enough to the nervous system without a needlessly prolonged struggle to continue the ordinary avocations; and, therefore, if there is even suspicion of the existence of typhoid fever, the patient should be put at absolute rest until such suspicion is removed.

DIET.

This is the division of our subject in regard to which conflict especially arises between the treatment of the patient and that of his intestine. The better his nutrition can be maintained, other things being equal, the more rapid will be his convalescence, the less the danger from exhaustion. But he has ulcers in his intestine which may perforate the wall of the gut or of blood-vessels contained in it. A question which I have been asking myself of late years, and on which I am trying to get light, is whether most of us have not allowed our dietetic treatment to be too much dominated by the local lesions. "Omne ignotum pro magnifico." The pulse, the respiration, the temperature, the abdominal distention, the tenderness, the state of the tongue, the ratio between the resistance of the patient and the demands upon it, all these are more or less open to direct observation or even measurement. Not so the constant intestinal lesion. We know that it is constant, and that in a certain proportion of cases fatal hemorrhage or perforation occurs; but we have absolutely no means of determining whether a particular case is likely to escape or fall a victim to one of these dangers. Peristalsis cannot be arrested for weeks in order to carry out the broad principle of rest for an actively inflamed part. Again, are we quite emancipated from the old doctrine of the lowering treatment of inflammation? We do not bleed, purge, and puke our fever patients nowadays; we do not withdraw water; we do not restrict food as our fathers did; but it is certainly fair to state that the profession, as a whole, considers pyrexia in itself an indication for lowered diet, liquid, often exclusively milk. Is it not possible that we sometimes make a mistake in dieting our patients with reference to their fever, rather than with reference to their digestive power? It is true that self-limitation is not nearly so constant a feature of tuberculosis as it is of typhoid; but we adjust the food of our tubercular patients to their digestive limits, even if we believe them to have intestinal ulceration. We see patients with typhoid whose tongues are clean or nearly clean, and whose digestive power seems to be relatively or absolutely unimpaired. I have in mind several hospital patients who have gone safely through what I afterwards became convinced was typhoid, under extra diet, which I should not, of course, have allowed had I not at the time of the pyrexia thought that typhoid could be excluded. I trust that I shall not be misunderstood. I am neither an advocate nor silent administrator of indis-

criminate diet in typhoid fever. I do not give my patient fishballs or beans, even Sunday mornings; nor pie at any time, although I esteem myself fortunate in that I live in the pie-bean-fishball belt. The local lesions preclude such things even if the pyrexia does not. But I cannot see why patients with typhoid fever should not have anything which is easy of digestion and leaves such residue as may reasonably be expected not to excite undue peristalsis, and irritation of their ulcerated Peyer's patches. Reference is to be had to the particular case. Those cases of typhoid fever in which irritability of the stomach is so pronounced that that very unfortunate term "gastric fever" may be applied to them, are to be managed in one way; those patients who are clamorous for food, in another. Milk, precious as it is in most respects, has the disadvantage of leaving a relatively enormous intestinal residue; and yet is not the intestinal lesion one cause of its great popularity and often exclusive use. I now give my typhoid patients who seem able to bear them, eggs (raw and very soft boiled), custards, animal broths, strained gruels, ice-cream, junket, blanc-mange, even scraped or very finely minced meat, in addition to their milk. During the two years I have followed this plan, I have seen no reason to regret it. I hope that it may have tended to obviate the risk of asthenia, and to have shortened the period of convalescence in a measure. The stools, of course, should be watched for the appearance of undigested food.

We should remember that there was a time when we attributed a relapse to dietary errors. We have all seen the recrudescence of fever after unsuitable diet, just as we have seen it follow fatigue, emotional excitement or undue fecal retention. But I do not believe a true relapse has ever been caused by food, however unsuitable. In short I plead for individualization in the dietetic management of typhoid fever as well as anywhere else in medicine, and the administration of as much and as wide a range of food as the patient can digest and as will not prove irritating to his ulcerated intestines. Water should be given freely internally to promote the elimination of soluble poisons.

INTESTINAL ANTISEPSIS AND THE MANAGEMENT OF THE BOWELS.

Sepsis and antisepsis are nowadays words to conjure with. We have learned much of late years about the rôle played by organisms and their products in the causation of anatomical change and of perversion of function. We are so impressed by the results which, in surgical affections particularly, have followed this increase of knowledge, that we may be in danger of allowing zeal to outrun common-sense. The pathogenic germ of typhoid fever seems to have been identified. We know its habitat in the body, something of its mode of entrance, and much of what it does; and it naturally occurs to us to try to destroy it in situ, or at all events to neutralize its action. Hence the use of intestinal antiseptics so called, agents which are so insoluble that they can reach the intestine and there tend to check putrefactive or fermentative changes. It seems to me there can be no question that we are able to favorably modify faulty intestinal chemistry by means of these agents in many cases of intestinal indigestion; but there are certain facts of which we must not lose sight. In the first place, decomposition is physiological in the intestine. Secondly, its existence depends probably on the pres- ject, at least so it seems to me. I mean the so-called

ence of organisms, destruction of which, were it in our power, would be a serious detriment to any person, sick or well. Thirdly, whatever the future may have in store for us, we have at present no means of directly interfering with the activity of the Koch-Eberth bacillus without interfering with the activity of the physiological intestinal microbes. Fourthly, the Koch-Eberth bacillus does not limit its residence in typhoid fever to portions of the intestine which can even theoretically be acted on locally. Again, obviously disordered intestinal action is by no means so invariable as the books would make us believe in typhoid fever, unless my experience is very exceptional. Analysis of 233 cases of typhoid fever which have been under my personal care in hospital during the last eight years, shows the state of the bowels to have been as follows:

Diarrhea a prominent symptom in				181%
Diarrhea a transitory symptom in				184%
Regular bowels in				14%
Constipation, usually relieved by enem	ata	, in		49%

Still further, there is no evidence to show that the disease can be aborted by early purgatives - calomel, for instance - followed by more or less continued intestinal antiseptic treatment; nor have we any reason to believe that relapse is less frequent in cases systematically thus treated. It seems to me to follow inevitably from the above that there is no justification for the routine employment of this class of drugs in typhoid fever, inasmuch as evidence is lacking that they can exert any influence here, other than that which they may exert in any other disease characterized or accompanied by intestinal lesions or disordered function. Their use, in my belief, should therefore, be limited to cases in which diarrhea, very offensive movements, meteorism, or other special indications are present. Thymol, thirty grains or so a day, is highly recommended by F. P. Henry. Napthaline, I cannot commend; it produced stranguary twice, and hematuris once out of seven cases in which I used it, though the doses were larger than would be given to day. My friend, Dr. Geo. L. Peabody, of New York, used it largely at one time, but he has now entirely abandoned it, and writes me that the cold bath is his only routine treatment. I prefer, myself, small doses of the salicylate or subgallate of bismuth. The former may be combined with beta-naphthol. Of course, the astringent properties of the bismuth compounds are to be remembered. I cannot see any objection to, and often order, a preliminary dose of calomel, especially in cases which come under observation early and without pronounced diarrhea. In cases characterized by constipation I resort to water enemata every second day. Glycerine enemata cause so much peristalsis in some people that they are not advisable in typhoid fever. It is my habit in cases of intestinal hemorrhage to administer morphia to the point of mild narcotism, with the idea of arresting peristalsis as far as may be and thus, perhaps, limiting the amount and duration of the bleeding. Laparotomy does not hold out much hope of rescuing the patient suffering from general peritonitis following perforation. A local peritonitis may get well spontaneously, or any abscess which it may cause can be opened later.

TREATMENT OF THE PYREXIA.

We now come to the most difficult part of our sub-

antipyretic management of the disease. The term is really not applicable, for there can be no question that the fever in itself is not so dangerous as we formerly believed. Cardiac exhaustion is not the result of pyrexia so much as of the absorption of toxines, and in mere reduction of temperature we are not necessarily serving our patient. Even the increased comfort which such reduction may produce can be too dearly hought. I cannot but regard the internal antipyretics thus far in common use as dangerous drugs in typhoid fever. One and all they are cardiac depressants in greater or less degree. Another objection to their use, less vital, though still real, is that they obscure diagnosis. I have repeatedly seen cases in consultation where these agents seriously increased the difficulties in deciding whether a patient had typhoid fever, or if he had typhoid fever, in determining the period of the disease or the presence of relapse. Now and then I see a case in which the discomforts of the pyrexia or headache are such that an occasional dose of an antipyretic seems to me to be justified; but these cases are quite rare. Phenacetine I believe to be the safest of these thus far in common use. My colleague at the Massachusetts Hospital, Dr. E. G. Cutler, has been using this summer lactophenin in fifteen-grain doses every four hours, and expresses himself as so far pleased with its effects. It differs from phenacetine in that lactic takes the place of acetic acid, and it is said to be less depressing. Personally, I do not be-lieve in the principle, and prefer to await further knowledge.

The cold-bath treatment was supposed by Brand and his followers to owe its efficacy to the reduction of temperature which accompanies its use; but the evidence is so strong that it is not the pyrexia that kills, that they have abandoned their first position and attribute the results to the stimulation of the nerve centres, depressed and poisoned by alkaloidal substances. It does not seem to me fair to adduce this change of base, as has been done, as an argument against the employment of the treatment. A fact may stand fast although an explanation of it may be demonstrated to have been false. This method of treatment has been slow of adoption in this country and in England, but I think there can be no doubt that it is now making real headway. Many reasons for our conservatism in this matter may be meutioned; incredulity at first, the published statistics seemed too good; also reluctance to believe that any procedure so obnoxious to the patient could be useful to him; and, further, practical difficulties in the way - the large amount of attendance and consequently increased expense involved, and the short terms of service enjoyed by most American hospital physicians. One of the staff might be willing or anxious to adopt the treatment; but it implies almost a revolution in the medical wards during six or more months in the year, and Anglo-Saxons do not like frequent revolutions, even in hospital wards, as well as do the Central American republics. As the German experience became more extended and the claims of Brand were largely substantiated in all parts of the empire - when the Frenchmen of Lyons, and Hare of the Brisbane Hospital, Australia, proclaimed their conversion - J. C. Wilson and others determed to try the method accurately and conscientiously; for it must be confessed that Brand would hardly have recognized his offspring in the earlier attempts in his treatment in this country. The facts

are readily accessible in Baruch's " Uses of Water in Modern Medicine," and Sihler's little book on the "Hydriatic Treatment of Typhoid Fever." The latter is especially interesting in that Sihler's personal experience has been mainly in private practice. tells us that his mortality in 174 bathed cases in the Johns Hopkins is 7.1 per cent., and that he believes this treatment, "harsh and onerous though it be," saves three to four per cent. Since the introduction of trained nursing a marked change has certainly come over the aspect of our typhoid fever patients.

The average typhoidal symptoms are not to-day in my wards what they were when I was interne twenty odd years ago, nor is the mortality nearly as high. I believe that the cold spongings count for much in this gain; but I cannot see any reason why we should not get as good results in our general hospitals as the Germans and French do in theirs. In military hospitals and in private practice the mortality should be lower than in a general urban hospital, which receives patients late in the disease, often with constitutions undermined by drink and privation. But our results are not as good, and the only explanation I can see is our failure to adopt and fully and intelligently carry Of 236 cases treated by me out Brand's principles. expectantly and with cold spongings 28 died, a mortality of nearly 10 per cent. In the summer of 1898 Dr. E. G. Cutler had a bath-tub put in the male ward, and I continued its use when I succeeded him, and am using it now; but in this period my number of bathed cases is too small to enable me to draw any conclusions. Nearly all the patients object to it, some bitterly; but this is far outweighed by statistics from which With the cold bath in there seems to be no escape. private practice, I have no personal experience, mainly because I have not had a case of typhoid fever in my own practice for several years, though I have seen many cases in consultation; but it is my belief that we shall find the objections to its use less formidable than we are now inclined to think them. Sibler's experience speaks in favor of this view. For some years now the cold spongings have been made much more efficient in the Massachusetts Hospital by rolling up the rubber sheet placed immediately under the patient at the sides so as to form a trough. We sometimes use water at 60°, sometimes water with a little ice in it to make up for the heat absorbed from the body. One attendant can use cold water in this way, while two are almost indispensable for the tub-bath, with affusion to the head and friction to the body. The cold wet-pack can also be given by one attendant. Baruch cites Leibermeister's assertion that five wet-packs of ten minutes each are required to abstract as much heat as one full bath for fifteen minutes. Within the last fortnight these three methods of using cold water have been tried by the kind permission of my colleague, Dr. Cutler, successively on several patients in the ward in order to contrast the results. These show no marked or constant difference in the antipyretic value of cold sponging at 60° for twenty minutes, the coldpack at 60° for fifteen minutes, or the full bath at 70° A full bath at 60° has a for ten to fifteen minutes. much more decided antipyretic effect. A temperature of 102.5° is considered as an indication for cold water. After all is said, the argument for the strict Brand

Physicians' Leisure Hour Series, Second Edition, vol. ii, 1893.
 Cleveland, 1891.
 Johns Hopkins Hospital Reports, vol. iv, No. 1.

method is that a mass of statistics from different observers in different parts of the world show better results under its use than those who do not use it can bring forward. A. L. Mason 5 reports that of 676 cases entered on the books of the Boston City Hospital as typhoid fever in 1890 and 1891, treated with spongings and expectantly, the mortality was 10.4 per cent., and he wisely cautions us against drawing conclusions from small numbers of cases. My statistics afford a good illustration of the need of this caution. In the years 1886 to 1888 inclusive, 129 cases of typhoid came under my care in the hospital, with a mortality of 8.5 per cent. My service was then changed from the summer to the winter term, and in the next In these five years 104 cases came under my care. the mortality was nearly 11.5 per cent., practically three per cent. higher, and yet cold sponging was much more efficiently practised in the latter than in the former series. A few cases brought moribund to the hospital, or an accidental series of the graver accidents of the disease makes a great difference in small totals.

The use of alcoholic stimulants calls for the exercise of more or less judgment. In a considerable proportion of cases they are never required unless the tub-bath is used, reaction from the temporary depression so often following this method of the application of cold water being hastened by small quantities of spirits and water.

In conclusion, it only remains for me to express the pleasure which I have in meeting the Fellows of this Society, and to thank you for your courteous attention.

A FEW CASES OF DIPHTHERIA TREATED WITH ANTITOXIN.

BY FRANCIS H. WILLIAMS, M.D., BOSTON.

Antitoxin has been used in Germany and France for a considerable period, and for many hundreds of patients with remarkably successful results by men who have had experience in treating diphtheria, and the drawbacks of the treatment are slight in the face of so serious a disease. I have employed antitoxin recently at the Boston City Hospital and in private practice, and am asked so frequently about its use that I think the following cases may be of interest. My experience with it thus far has been small (about twenty cases) but it is already evident to me that in suitable cases the results wrought by this remedy are wonderfully prompt and good. It is likewise evident to me that in its use certain precautions should be taken.

There are three European makes of antitoxin—Roux's, Aronson's and Behring's. It is also now being made in New York. It is essential to use a trustworthy preparation. The first make has not reached this country, so far as I am aware. Behring's has three strengths. No. 1 is the weakest, and is used for immunization, one-quarter of a bottle being the dose; the duration of this immunity is uncertain; it continues probably only two or three weeks; the dose may then be repeated; or No. 1 may be used for treatment if injected in the earliest stage of the disease. Nos. 2 and 3 are used for treating the disease; No. 3 being two and one-half times stronger than No. 1 and correspondingly expensive.

For injecting the solution I use ordinary syringes

⁴ Boston Medical and Surgical Journal.

with a glass barrel, one of which holds 5 c. c. and the other about 10 c. c.; each has the fine needle of a small hypodermic syringe. The syringes should be carefully cleansed first with alcohol and then with a 1 to 20 solution of carbolic acid immediately after use. The injection should be made subcutaneously into the side of the thorax or the thigh. The skin should be carefully cleansed with antiseptic solution at the point chosen for injection.

As a preventive I have used antitoxin in five individuals, all adults, the dose given being 2 c. c. of Aronson's solution; these persons did not develop diphtheria; there was no action from the antitoxin so far as I saw. If the individual who has been given a small dose develops diphtheria soon after, it is said that he has it in a milder form.

For treating the disease a much larger amount is required; and, as already indicated, the solutions should generally be stronger. I will first consider the use of antitoxin in a desperate case.

Case I. A. B., two years old, had been ill five days when I saw him, at which time the false membrane had evidently extended into the smaller bronchi. It seemed an entirely hopeless case; still at the earnest desire of a physician and friend I injected 10 c. c. of antitoxin. There was no change. The child died in twelve hours.

Every day's delay in administering the antitoxin lessens its usefuluess. It should be given if possible before the third day. From reports thus far published it is far less serviceable in the late stages of the disease, and much larger doses are required at this time than at the beginning. Further, it may be added here, that the remedy is chiefly serviceable against the bacillus of diphtheria; if streptococci with the complications to which they may give rise are also present, it is far less efficacious.

CASE II. T. M., five years old, well developed and in excellent condition. I was told that her brother had died of diphtheria three weeks before; she had complained of her throat for two or three days before entering the hospital. When first seen by my houseofficer both tonsils were moderately congested and somewhat edematous. On the left tonsil there was a patch of false membrane about an eighth of au inch in diameter; the right tonsil and the posterior wall of the pharynx were covered with false membrane. By the following morning there was much more swelling and edema, especially of the uvula, and the false membrane had extended over the right anterior pillar and on to the left anterior pillar. The swelling of the glands in the neck on the right side was very marked, and the general condition of the patient and the throat were worse than at entrance, twelve hours before. She took food only fairly well, as swallowing was difficult. Bacilli of diphtheria were found in culture. At this time, when I first saw her, I injected 10 c. c. of Behring's No. 2 solution subcutaneously into the thigh. All other treatment was omitted. In the afternoon thereafter the patient was rather sleepy. On the morning of the third day, that is, twenty-four hours after the injection of the antitoxin, the patient's general condition had improved; in the afternoon the area of false membrane was smaller, and it was loosening and coming off. I took away with the forceps a piece of false membrane, one-half by threequarters of an inch, which was hanging by a thread in front of the uvula, as I feared that it might be drawn

into the trachea and choke the child. Twelve ounces of milk and two eggs were taken on this day. The urine was small in amount, and passed only an ounce at a time. Two loose dejections in the afternoon. The general and local improvement during these twenty-four hours was marked, and more rapid than usual in patients in her condition. On the fourth day the patient eat and slept well. There was less false membrane; a little remained on the right anterior pillar and there was a small spot about an eighth of an inch in diameter on the left tonsil. Less congestion and swelling. On the fifth day the throat was nearly clear of membrane; only a small area remained on the right tonsil. Patient in excellent condition. I did not see her again, as my service was at an end; but by Dr. Withington's permission I give a further record of the case. On the eighth day the throat was clear of false membrane, and she was doing well. On the ninth day a rash of scarlet fever appeared on her chest, and spread all over the body. She vomited several times. On the eleveth day the respirations were from 50 to 60 a minute; but careful examination of the lungs and heart did not reveal anything else abnormal. On the fourteenth day there were bacilli still in the throat. When I last heard from her she was still desquamating and doing well.

CASE III. S. E., a well developed child four and one-half years old, whom I saw in consultation with Dr. H. W. Broughton of Jamaica Plain. There had been diphtheria in the neighborhood. Six days before I saw the child she had been ailing, and five days before she had vomited. On what I will call the second day of the disease, although probably the disease had begun some days earlier, Dr. Broughton was called, and found false membrane on both tonsils and on the posterior pharyngeal wall. On the next day, when I first saw her, the temperature was 102°, pulse 120. The local symptoms were severe; there was much congestion and swelling; both tonsils, the uvula, both sides and the posterior wall of the pharynx, were covered with a thick, false membrane; and there was complete aphonia and croupy breathing. I injected 15 c. c. of Behring's solution of antitoxin, No. 3 (the strongest) - 5 c. c. in each of three places on the outside of the thigh. On the third day of the disease, twenty four hours after the injection of the antitoxiu, the false membrane had begun to loosen and looked moister. During the day the throat was sprayed twice with a twenty-five-volume solution of hydogen dioxide, which assisted in removing the false membrane from the pharynx. The improvement by the afternoon of this day was unquestionable; barring accidents the patient seemed likely to recover, although thirty-six hours before her recovery seemed very doubtful. At 9.15 P. M. of this same day Dr. Broughton sent for me again, as the child had difficulty in breathing, and there was marked retraction. It seemed as if tracheotomy might become necessary directly. Dr. Broughton gave the child a teaspoonful of ipecac as an emetic; and three or four minutes later she got up a piece of false membrane one quarter by one inch and a half long, and the breathing improved immediately. About half an hour later a small amount of mucus was vomited. Evidently the false membrane was separating in the laryux as it had done in the pharyux. It seemed to me now that tracheotomy might be avoided. This early loosening of the false membrane

membrane may get into the windpipe and choke the patient, and the rapid loosening of the false membrane in the trachea, is a danger about which one must be on one's guard in using antitoxin. Dr. Broughton remained at hand during the night, and every preparation was made for tracheotomy in case it should become necessary, but fortunately it did not. On the third day the temperature was normal, pulse 104, respiration 24. The patient took nourishment well, but spoke in a hoarse whisper. Pharynx almost clear of false membrane. On the tenth day she is reported as doing well except that she has a whispering voice; up and dressed; bacilli still in culture.

CASE IV. S. J., twenty months old. General condition excellent. Seen in consultation with Dr. M. A. Mörris, of Charlestown, when the patient had been ill only one day. Glands in the neck enlarged; tossils and pharynx covered with false membrane; very irritable. At 1.30 p. m. pulse 136, temperature 101.8°, respiration 32. I injected 10 c. c. of autitoxin, choosing Behring's No. 2 solution. (The following day the bacterial examination showed the presence of the bacilli of diphtheria.)

	•	•		Pulse.	Temp.	Resp.
5 P. M.				134	1015	32
8 P. M.				136	99.20	22
11 P. M.				132	1 01 °	32
2 A. M.				130	99.8 °	30
5.30 A. M.				120	98 0	26
12 M.				124	99°	28
3 P. M.				120	99°	31
8 P. M.				120	98.6°	20
10 P. M.				114	98.6 °	28

On the third day of the disease he took nourishment well and was playful. The swelling of the glands seemed to be less, and membrane growing softer. On the fifth day pulse 102, temperature normal, respiration 28. Swelling and membrane much diminished. Child seemed perfectly well.

The advantages of this method of treatment especially in young children are evident. Local applications to the throat of this child would have been impracticable. Without antitoxin it would have been wisest to let the disease run its course, unless it became laryngeal, when the chances of recovery would have been small.

CASE V. J. M., ten years old. Seen in consultation with Dr. W. O. Hunt, of Newtonville. Bacilli of diphtheria were found in culture. Septic case, with nassl discharge; false membrane covering the tonsils and pharyngeal wall. Aronson's solution was injected subcutaneously on the second day of the disease, when I first saw the patient. A two-volume solution of hydrogen dioxide was applied in spray to the nose and later I increased the strength to five volumes, as this was well borne. In the throat I used a twenty-five-volume solution. The bacilli were not found in the throat on the seventh day of the disease. The recovery was rapid.

sent for me again, as the child had difficulty in breathing, and there was marked retraction. It seemed as if tracheotomy might become necessary directly. Dr. Broughton gave the child a teaspoonful of ipecac as an emetic; and three or four minutes later she got up a piece of false membrane one-quarter by one inch and a half long, and the breathing improved immediately. About half an hour later a small amount of mucus was vomited. Evidently the false membrane was separating in the larynx as it had done in the pharyux. The glands on both sides of the neck were noticeably enlarged and tender. The child was restless and disinclined to take its food. Bacilli of diphtorial found in culture. I injected 10 c. c. of Behring's was sprayed with a twenty-five-volume solution of hydrogen dioxide every three hours. In the evening the child was no worse than in the morning. Drowsy

during the afternoon. The next morning, twenty-four hours after the injection of the antitoxin, the child was better. More than two-thirds of the false membrane had disappeared from the throat. There was less congestion and swelling than in the evening before. The glands were still enlarged, but not so sensitive as the day previous. She swallowed more easily, and had taken three pints of milk in the past twenty-four hours. Played with small toys, but too continuous playing was forbidden lest it should tire her. On the fifth day the throat was clear except a small spot of membrane one-eighth of an inch in diameter on the right tousil. The twenty-five-volume hydrogen-dioxide solution in spray was continued every four hours. On the sixth day of the disease the throat was clear and nearly normal in color, and bacilli of diphtheria were absent. The child seemed perfectly well.

Cases V and VI, in which the bacilli disappeared

promptly, had strong dioxide solution locally.

I will not lengthen this sketch by outlining more of the cases in which I have used antitoxin. If there is no improvement within twenty-four hours, and if the pulse and temperature remain high, a second injection should be made. That many of the cases lose their serious aspect within one or two days after the antitoxin has been used is noteworthy. As soon as a case of diphtheria occurs in a family a preventive dose of antitoxin may be given to all of the children.

In Europe local treatment is recommended to be used with antitoxin. In some of my patients I have used antitoxin alone, and in others I have combined with it local treatment with a twenty-five-volume acid solution of hydrogen dioxide in the throat (made from the U.S. Pharmacopæia ten-volume solution of the Oakland Chemical Company); and in nasal diphtheria I have used in the nose a dilute (two-volume) solution. These solutions may be used every three hours in The loosening and softening action of the antitoxin, together with the disintegrating action of the hydrogen-dioxide solution remove the membrane rapidly, and the hydrogen-dioxide solution lessens, if it does not obviate the danger of pieces of false membrane getting into the trachea from the pharynx.

In treating diphtheria, I now, as a rule, inject antitoxin, and apply a spray of a twenty-five-volume acid solution of hydrogen dioxide locally in the throat, and a two-volume solution in the nose once in three or four hours, and use no additional treatment. Good food, absolute rest, protection from draught or from a temperature that might give the patient a cold, are to be insisted upon. In some cases a little stimulation may be desirable.

CASES FROM THE UTERINE WARD OF THE CITY HOSPITAL.1

BY JOHN G. BLAKE, M.D.

DURING the summer just passed, among the mass of uterine cases in my service, the following appeared of sufficient interest to report. They are: a case of imperforate hymen with retained menses - operation, recovery; a case of what might easily pass for hysterical paraplegia in a girl fourteen years of age menstructing for the first or second time - recovery; a ruptured tubal pregnancy with specimen — operation, recovery; a peculiar vesico-vaginal fistula - operation, recovery; and a case where the round ligaments

¹ Read before the Obstetrical Society of Boston, October 13, 1894.

were absent as the result of a previous laparotomy a surgical curiosity. A peculiar coincidence in Cases I and II was, that I was first called to relieve retention of urine in each case. As both subjects were girls, quite young, it seems a little singular, although nothing more than might be expected from the diseases. The detailed histories are from the hospital records, which I have tried to make complete as far as I could under the difficulties attaching to an ignorance of our language in Cases I and II.

Case I. A girl, eighteen years of age, who worked regularly in a confectionery store, was reasonably well and not conscious of any functional irregularity, was thrown into a state of hysterical grief by the sudden death of her father. After several hours' suffering she began to complain of pain in the lower abdomen, and I was sent for. I found a swelling which resembled pregnancy at four months. As that was out of the question, and the surroundings and circumstances did not admit of much inquiry, I fortunately thought of a distended bladder, and solved the difficulty by passing a catheter and drawing off nearly two quarts of urine. This relieved the girl for a time. After the funeral, I examined into the case more fully, and found that the pain, which now became of a bearingdown character and constant, was independent of the An examination revealed an imperforate bladder. hymen, and elicited the fact that the girl, although between seventeen and eighteen, had never visibly

An aspirating-needle of large size was passed, and about a pint and a half of fairly thick dark blood was evacuated, perfectly inoffensive. After a few days the patient was etherized and the hymen freely in-The cavity was thoroughly washed out with a weak corrosive solution, and then packed with iodoform gauze. The after-treatment was not different from that pursued in similar cases. The strictest antiseptic precautions were observed throughout all stages of the case, and the recovery was uneventful and com-Twenty-eight days after the operation patient menstruated normally, and has been perfectly well since. It was found that the opening showed an inclination to contract so that patient was furnished with a large-sized bougie, which was to be passed occasionally.

In a similar case I should act differently in regard to the hymen, excising it completely rather than incis-The tendency to contraction in operations about the vagina, such as atresia, and for bands as well as for imperforate hymen, is, we all know, very marked. I should not be surprised if in the future, particularly if patient contemplates matrimony, excision would be required.

This case illustrates perhaps as well as any, the great value of antisepsis. In old times the fear of peritonitis was a bugbear about operations which every surgeon had to reckon with, while now the thought of it does not enter seriously into his consideration of the case. Whether the fluid distends the uterus and Fallopian tubes or simply the vagina, has never to my knowledge been demonstrated. Very likely the tubes are filled and stretched, and on this account may have rendered the cases more subject to peritonitis.

Case II. Acute myelitis following hemorrhage. Marie, fourteen years of age, recently arrived from Italy, a strong, healthy-looking girl, developed physically much beyond the average American or

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Irish girl at the same age, was seized with retention of urine quite suddenly, accompanied with loss of power and feeling in her lower limbs. As far as I could ascertain, symptoms came on during menstruation, which had appeared for the first or second time, and was present at the time of my visit. The condition of paraplegia was absolute, complete. There had not been incontinence of feces, and in fact there was constipation for the two or three days preceding the As the case began like one of hysterical paralysis, it was watched for two or three days, in the hope that amelioration might attend treatment, but without result. Patient was then sent to the City Hospital and seen by Dr. Bullard. By special request she was allowed to continue in the uterine ward under my supervision, and the treatment recommended by Dr. Bullard followed. The result has been very gratifying. She is steadily but slowly recovering the use of her limbs, has very good sensation, wheels herself about, and promises to eventually do very well.

The rapid recovery and absence of certain symptoms usually found in this disease clouds the diagnosis not a little. The hospital record is as follows:

M. O., age fourteen, single, native of Italy. patient does not speak English, history was not obtained. Patient's mother had hemiplegia.

Patient entered hospital June 29, 1894, with a history of paraplegia of the lower extremities coming on during one night, about a week previous to entrance. Examination found motion and sensation above waist normal; from the fourth lumbar vertebra on the right to the second on the left, sensation and motion absent; no reflexes detected; paralysis of bladder and rectum, with incontinence of urine and feces. There was slight discoloration, with slight abrasion of the skin over both buttocks, which are impending bed-sores. Urine negative.

July 5th. Dr. Bullard saw the case, and made a diagnosis of acute transverse myelitis in the lumbar region. Integument over buttock not improved under treatment of zinc ointment.

Sensation over lower extremities nor-July 7th. No motor power, however. Treatment coufined to laxatives. No change in condition of sphinc-

July 12th. Bed-sores almost well. Patient continues to have no pain. Some control of the bladder. Incontinence of feces continues.

July 16th. Some motion noticeable.

July 26th. General condition excellent. Patient sitting up in a chair. Defecation still involuntary. Motor power rapidly improving.

August 4th. Patient has been having some lancinating pains in thighs accompanied by prickling sensations in feet and legs.

August 8th. Patient has complete control of sphincter ani, and fair control of vesical sphincter. Nux vomica has been given during past five days, but as it seems to cause pain was stopped.

August 22d. Complete control of sphincters. Faradism to lower extremities commenced.

September 5th. Patient gaining some strength in lower extremities. Some tendency to bed-sores over buttocks. Sits up several hours a day. Appetite good; general condition excellent. Sphincters and sensation normal. Not yet able to walk.

October 13th. Able to get out of bed without as-

trol of sphincters. [Walking about from ward to ward on crutches as this goes to press.]

CASE III. Vesico-utero-vaginal fietula.

J. O'N., age twenty-eight, married, native of Ireland, entered hospital July 21, 1894. Has had five children born at full term, and two miscarriages. The last child was born on the 30th of June, 1894, being delivered by instruments without ether. Duration of labor not over seven hours.

July 21st. Entered with temperature of 102°, pulse 140, complaining of pain in back and bladder. Examination found vagina very much inflamed, sensitive, and bleeding to touch. Buttocks covered by an erythema caused by the action of the urine. Just anterior to the cervix, laceration about an inch in length extending into the bladder, somewhat transverse, and involving the wall of the cervix, through which the urine dribbled constantly. Profuse muco-sanguineous discharge from cervix. It was deemed best to first heal the inflamed vagina before repairing laceration. The insertion of dry packing twice a day with iodo-form accomplished nothing in four days. Oleate of zinc was then applied, dusted over the vaginal walls; and in the course of four or five days inflammation had entirely disappeared. Tenderness of vagina al-Urine negative. During this time the most gone. temperature ranged from 101° to 103°, and there was considerable gastric disturbance.

July 31st. Operation under ether by Dr. Blake. Cervix repaired in the usual manner. Silver-wire Vaginal lacerations were then sutures were used. denuded, and edges approximated. Soft-rubber catheter introduced into the bladder. Patient was kept in the ventral position for fourteen days. Bowels were kept closed for fourteen days by the use of morphia. During the first five days following the operation the temperature remained at about 102°. Paroxysms of pain occurred several times a day, and were very severe, lasting, however, only a few minutes, and were referred to the uterus. Some leakage into the vagina at this

August 12th. Silver-wire sutures removed. Patient to be kept in the ventral position a few days longer. During the past week temperature has been normal. Slight dribbling of urine still present. This continued until patient's discharge to Convalescent Home, August 25th. At this time she was feeling perfectly well and her general condition was good. There was no pain or urinary discharge, only an increased mucus, inodorous discharge from vagina.

After her return from the Convalescent Home, the patient called on Dr. Blake at his office, September 10th, and stated that she was entirely free from discharge of any kind from the vagina, and was on her way home, perfectly well, to resume housekeeping and family cares.

The point of interest in the case and the difficulty in operating was how to close the uterine tear through which the urine passed so freely into the cavity and out through the cervix. Very great pains in the preparation for, and introduction of sutures through uterine parieties was needed before taking up the vaginal laceration. Ten fine, silver-wire sutures in all were The laceration seemed T-shaped, tearing required. transversely outside of cervix and longitudinally along uterine canal.

The modus operandi for the production of an injury stance, and to stand but not walk. Has perfect con- of this shape and extent seemed to require that one blade of the forceps should be outside the cervical canal and the other within. It is hard to realize, however, that in these days such a condition of carelessness and ignorance should exist. Evidently, however, the injury was a laceration and not a slough; and this, no doubt, aided the cure. The insistence upon the ventral position for fourteen days, keeping the bowels unmoved during the entire period and the bladder constantly empty, were all considered absolutely essential. The complete cure by a single operation was more than could be hoped for without taking advantage of every possible aid.

[Since reading this article, the attending physician states most positively that the fistula resulted from a rupture of the uterus followed by cessation of pains and that the forceps were applied in the usual manner to complete the labor. After a month at home patient began leaking slightly again. She reentered the hospital where Dr. C. M Green, surgeon on duty, successfully operated by splitting up the cervix freely on each side and closing the opening. Up to date she has continued well. The cervix will be repaired later on.]

It seems out of place to spend so much time on such a simple thing as a vesico-vaginal fistula, which Dodo-like is almost extinct, but the time may not be wasted if members are reminded that close attention to the petty details of after-treatment are absolutely essential to success.

CASE IV. Extra-uterine pregnancy.

G. M., age twenty-three, married, born in Gloucester, entered hospital July 19, 1894. Menstrual history negative; last appearance June 15th. Had one child about two years ago. About one month ago, without known cause, except perhaps catching cold, the patient was suddenly seized with severe acute pain in right hypogastric region, lasting about two hours. Two days later she had a similar attack, losing consciousness for about one and one-half hours. During the next two weeks she had an attack every day, in the first two of which she lost consciousness. After two weeks it settled down into a dull, steady ache which has remained ever since, night and day, but not sufficient to prevent sleep.

Five or six days ago she noticed a swelling in the right hypogastric region, about the size of a hen's egg, not very tender, which she could pick up in her fingers. The next day it had grown to be about one-third larger, and she could not pick it up. Since then it has not changed. She has had no sharp attacks of pain in this lump, but there has been a steady dull pain, with a sensation of tightness. She has been confined to bed from the beginning. About ten days after going to bed she began to flow, the blood at first being clotted. This was about two days after her usual time for being unwell. There has been dribbling of blood ever since. An exacerbation of about three or four days, July 13th. She uses three or four slightly soiled napkins every day.

At time of entrance pulse was 100, temperature 100.4°. Patient complained of pain in the hypogastrium, running into right thigh. Urine showed a trace of albumen and considerable pus; no casts seen.

Examination finds in right ovarian region a globular mass, very tender to pressure, but without distinct fluctuation. Bulging and fluctuation in Douglas's sac. More or less clotted sanguineous discharge from uterus. Case was believed to be either one of abscess or hematocele.

July 20th. Patient etherized. Needle introduced into swelling in Douglas's pouch, just behind cervix. Grumous blood was discharged through canula. After half an ounce was allowed to escape canula was withdrawn. Case evidently one of ruptured extra-uterine pregnancy. Was recommended for laparotomy.

August 14th. Operation by Dr. Gavin, assisted by Dr. Munro. Incision made over the tumor down into the peritoneal cavity; length of incision, four and onehalf inches. Between the layers of the right broad ligament was a tumor the size of a baseball. Incision into this tumor evacuated a considerable number of large, dark clots. Tumor apparently a cystic growth. Ovary attached to the outer side of mass, but apparently normal. Ovary and tube were so incorporated into tumor that it was impossible to remove tumor without removing ovary. During the excision of tumor a number of clots escaped into the abdominal cavity and were washed out with distilled water. There were a good many adhesions around the tumor, which were separated with difficulty. Ligature passed through the broad ligament, next to the uterus, and tied, including the tube. Right appendages of broad ligament with tumor attached were excised. Abdomen douched with distilled water. Glass drainagetube placed in wound, down to the bottom of right iliac fossa. Abdominal wound sutured through entire wall. Two iodoform gauze wicks. Baked dressing covered over by rubber dam, which was covered by a second layer of baked gauze.

The pathologist reported that the ovary contained two small dilated Graafian follicles and a corpus luteum with firm, undulating, yellowish periphery on section. There was red-brown fluid within the Fallopian tube, showed uterine end undilated, about four inches long. A fine probe passed into the lumen entered a sac the size of a large hen's egg. On one side of the wall of the sac was an area three inches in diameter and four millimetres thick, of a yellowish-red color. A small piece tossed in salt solution from area showed chorionic villi, with vessels and fatty degenerated cells. Sac, and on one side end of fimbriated extremity of tube. Sac containing 100 c. c. of dark clotted blood, and wall of sac formed by undilated proximal end of tube.

Convalescence from operation was marked by a sudden hemorrhage of about one pint when gauze was removed from wound one week after operation, and by another smaller hemorrhage from a similar cause two days later. Patient is now convalescent, and wound healed excepting a small granulating area.

CASE V. An attempt to perform an Alexander operation in a case in which the round ligament had

been removed in a previous laparotomy.

K. W., age twenty-nine, single, born in Ireland, school-teacher, entered hospital May 22, 1894. Menstruation normal with the exception of some associated pain, before, during and after. This pain was severe enough at times to confine her to bed. There was a history of laparotomy in January, 1893, the object and nature of which the patient knew nothing. The symptoms for which patient entered hospital were severe backache which incapacited her for earning her living. Vaginal examination found uterus retroverted and retroflexed. No evidence of uterine disease. Was readily replaced and pessary inserted.

June 2d. Vagina has proved itself to be intolerant to a pessary, and Alexander's operation is recom-

mended.

Operation under ether by Dr. Blake. After a search of two hours without finding the round ligaments, the incisions were sewed up. It is probable that the round ligaments were removed in the laparotomy above referred to.

Patient made a normal convalescence, and was discharged to Convalescent Home, with recommendation

that a ventro-fixation be done.

TREATMENT OF URETHRAL CHANCROIDS.

BY F. C. CLARK, M.D., PROVIDENCE, R. I.

No more obstinate and trying case presents itself to the surgeon, perhaps, than the chancroid of the male A chancroid is ordinarily a matter of so little moment, and the proper remedy so ready in every physician's office, that the cure of this disease seems almost child's play. But in the case of the urethral ulcer the destruction of the virus of the local sore is only a tithe of the work to be done; for it is then, and then only, that the real difficulty in the cure begins.

The authoritative works on the subject are so pessimistic in their views, or else so chary of giving advice which is generally not well known, that we can gain little or nothing from them. After consulting ten or a dozen reputable works on venereal diseases without finding hardly a hint of the proper course to be followed in all such cases, the writer was left to his own resources; and he fell on a plan which gave

him surprising and gratifying results.

It is not our intention to enter into any discussion relative to the possibility or the impossibility of a soft chancre appearing in any and every part of the male urethra. Suffice it to say that it must at least be seen In one of the two cases under to be diagnosticated. examination the ulcers appeared wholly within the urethra; in the other, an ulcer first appeared near the inner edge of the meatus, and then others within the urethra, due to reinoculation — none were visible beyond an inch from the meatus. The age of each patient is of no interest to us; neither is his condition nor color. They were strong, healthy males. Both, part of the time, were under treatment together. second case had the advantage of the first, so that the two were pronounced well within a few hours of each other. The extension of the disease in the second case undoubtedly delayed his cure; for as many as fifteen or twenty new ulcers appeared during treatment, due to reinoculation, which had to be retouched with

In the treatment of this particular local sore, as in others, two axioms, we might say, should be followed: one the absolute destruction of the virus; the

other the healing of the sore.

A few words only will detain us on the first point. The only difficulty experienced here will be in getting at the sore. When the chancroid is situated from a half to a full inch from the meatus, this is not so easy The urethra must, therefore, be distended not be tried. a matter. A Toynbee's ear speculum will do it, to that point. or any ear speculum; or a pair of dressing forceps, well oiled and insinuated into the urethra and then the blades carefully spread apart as far as may be necessary, is as good as the best meatoscope. In a person of a sensitive organization the instrument used may be rubbed with an ointment of cocaine (four percent.). they did not seem to have any advantage over the red

In this way one may be enabled to touch each sore thoroughly, and destroy the virus on one application. Don't tamper with the disease. Use strong nitric acid. A small pointed strip of asbestos, or a piece of lint or cotton fixed on the end of a silver probe, or a pointed sliver of wood (like a match), dipped in the acid and applied to every part, will answer.

Now, having destroyed the poison, every encouragement must be given to the healing process, to prevent reinoculations, and thus spare the patient additional, The disease must and oftentimes, unnecessary pain. now be treated like any ulcer of the urethra, not venereal. It is now a matter of pure surgery; and it lies wholly within the power of a surgeon to relieve the trouble or to stumble along in the dark to his own

disgust and the patient's disappearance.

In any operation within the male urethra it is the desire and aim of the surgeon to keep the wounded or cut surfaces of the canal apart - for two reasons, namely, to favor healing and to prevent narrowing of this canal. The same is true in cases of urethral chancroid. The diseased surfaces in the latter case, for like reasons, are kept apart, and also for the purpose of preventing future reinoculation, should any virus be left or any sore at first escape notice. Otherwise, by continual reinoculations the cure will be greatly retarded.

A hundred methods may be employed to keep the diseased surfaces well separated. Whatever is used the principle remains the same. The writer employed pledgets of absorbent cotton (lint or any other soft and pliant material may be used) smeared with petro-When a stimulating ointment was deleum jelly. sired, a mild ointment of red oxide of mercury was used, in the proportion of one part of the officiual ointment to seven of lard or of simple cerate. When the patient wished to pass his water, the cotton was withdrawn and a short piece of a gum catheter (say No. 8 or No. 10 Eng.), long enough to reach beyond the diseased portion of the urethra, and well smoothed at the cut end and well oiled, was introduced. way the tender surface would not be torn by the passage of the urine. After every urination a fresh piece of cotton, treated as before, was introduced. In every case the temporary catheter must be well cleansed, and disinfected if possible. Strict cleanliness of person, instruments and appliances was enjoined. old dressings (if any are used) should be burned up.

Instead of this alternate use of the pledget of cotton and of the catheter, perhaps some advantage in the treatment of such cases might be gained by leaving a short catheter in the urethra until a cure is effected. In this case the catheter should be removed and another introduced, or if only one is employed the urethra protected while the patient cleanses the instrument before its reintroduction. Catheters of light weight are to be preferred, especially if to be retained in the urethra during treatment. After the disease disappears, the gum catheter should be burned. As the writer had but two cases, the permanent use of the catheter could Should be have another case, he might try it.

The best topical application besides the stimulating ointment of mercury is one of a liquid character, and which can be used by means of a syringe. Their number is almost legion. The writer employed both the black and yellow washes (lotio nigra and lotio flava); but

oxide of mercury. Such washes may be applied two or three times a day, and diluted to suit each case.

Zinc, lead and copper salts may do good.

However, whatever treatment is followed, that which is simplest, neatest, and gives the most comfort to the patient - is most in accordance with common-sense is the ideal one, and should be selected in preference to putting into practice any pet theory by which nothing additional is gained.

NOTE ON THE BROMIDE OF ETHYL.1 BY CHARLES GREENE CUMSTON, B.M.S., M.D.

BROMIDE of ethyl or hydro-bromic ether, was discovered in 1828 by Serullas, the formula being C² H⁵ Br. It is most important not to employ the bromide of ethylene, a very toxic substance, only slightly volatile and a bad anesthetic. Bromide of ethyl is a very volatile liquid, its boiling-point being 40.7° C. burns with difficulty. Its density is 1.40.

When fit for administration the liquid should have the following properties: (1) It must be extremely volatile; when poured on the hand, it should evaporate completely and rapidly without leaving any deposit. (2) It must be colorless; if it is yellowish, this signifies that it is decomposed and that a little bromine is set free, which would irritate the respiratory system.

(3) Its odor must be sweet and ethereal.

The purity of the drug depends (1) on the manner of its preparation, and (2) on the manner of preservation. The only correct manner of preparing it is by decomposing alcohol of wine by sulphuric acid in presence of bromide of potassium, and afterwards rectifying it by distillation on oil of sweet almonds. Light, dampness, contact of air decompose it. It should be kept in tubes hermetically closed by a flame.

PHYSIOLOGICAL ACTION.

The studies of Dastre have proven that bromide of ethyl is adapted for use in the human subject. Narcosis by this drug is similar to that of chloroform. Both act on the brain, then on the medulla, and lastly on the bulb. Chloroform chemically irritates each centre before it paralyses them; bromide of ethyl acts directly, there being consequently no excitement and no laryngeal reflex to be feared. Still more, it is a vaso-dilator; it produces congestion of the head, and thus no syncope is to be feared; at the same time, this permits of the sitting posture of the patient, so necessary in certain operations on the throat.

MODE OF ADMINISTRATION.

The dose of bromide of ethyl varies according to the age of the patient. In children from two to ten years, I employ from 12 to 15 grammes; for children over twelve and adults, from 15 to 25 grammes is to be given, according to the constitution of the subject. The patient should be instructed emphatically to take nothing to eat, not even a glass of milk on the morning of the operation. The mask should cover the mouth and nose perfectly, and no air be allowed to enter; and on this point I insist. The entire dose should be given at once. Twenty to thirty seconds is sufficient to obtain sleep, and the operator should be in readiness to commence as soon as narcosis is com-

 1 Read, by invitation, before the Obstetrical Society of Boston, October 13, 1894.

plete. The insensibility lasts from two to three minutes, sometimes a little longer. When narcosis is complete, the mask is removed; and under no consideration should it be again applied. Patients coming out of the narcosis are usually calm. They slowly open their eyes and speak coherently, remembering nothing of what passed. The patients are up on their feet in a few minutes perfectly well.

I have given or have had bromide of ethyl given under my supervision some two hundred times. At the Boston Dispensary I employed it in the surgical service of Dr. E. O. Ous in some ten cases, and have given it in private practice at my office three times since my return to Boston. Some deaths have been reported; but if my methods of administration are followed, I feel sure that no accident can occur.

USES OF THE BROMIDE OF ETHYL.

It may be said at once, that all short minor operations can be done during narcosis with this drug. 1 have several times dilated the sphincter ani for fissure, with complete success. Superficial tubercular glands can be removed, abscesses opened, etc. In a case of mammary abscess of considerable extent, that I operated on a year ago, I was not only able to make a deep incision, but used the curette freely, the patient being entirely unconscious of the painful operation. Narcosis with this drug is particularly good when examination of the pelvic organs is to be made or a pessary introduced, for there is complete relaxation of the abdominal muscles, thus permitting an easy palpation. I could enumerate many other cases in which I have employed the bromide of ethyl but I think the above will suffice to show what may be accomplished with it.

In closing, let me add that no disagreeable odor remains in the room, and the patient is able to enjoy his breakfast without nausea or headache. I would formulate the following rules as to the administration of this useful anesthetic:

(1) Bromide of ethyl should be carefully distinguished from the bromide of ethylene.

(2) Only employ a pure, and, if possible, a freshly prepared bromide of ethyl.

(3) Only give the drug en masse, as some patients have died by giving small and continued doses.

(4) Do not prolong the administration over one

(5) Once the mask is removed and the operation begun, do not apply it again.

(6) The contra-indications are dangerous lesions of the heart and lungs, as well as of the kidneys.

Clinical Department.

A REVIEW OF A SUMMER'S WORK IN THE GYNECOLOGICAL SERVICE OF THE BOSTON CITY HOSPITAL.

BY E. P. STARBIRD.

This paper is written as an adjunct to the cases reported by Dr. Blake. It is not intended to discuss any special lines of cases at length, my object being merely to outline in a very general way the material which has presented itself for treatment. Special cases of interest will be briefly mentioned.

Owing to the limited number of beds, and the de-

mitted. The great majority of these cases recovered under rest and local palliative treatment, and left the hospital symptomatically, if not anatomically, well. In two cases pus was evacuated by vaginal incision and drainage, and recovery took place by granulation.

DECEMBER 20. 1894.

Four cases only finally came to laparotomy. In one pus was evacuated by abdominal incision, and the wound healed by granulation. In three cases which were transferred to the surgical side the inflamed tubes and ovaries were removed. One case recovered. Two died; one on the fifth day after the operation, without

obvious cause; the other of peritonitis and acute congestion of the lungs. In the latter case, which was a large tubo ovarian abscess firmly adherent in the pelvis,

A symptom which seemed to be of value in distinwas, that in the latter the pain complained of was of a griping character, recurring several times a day, and lasting from ten to fifteen minutes, with intervals com-

paratively free from pain.

mands made upon the service, comparatively few cases of simple lacerations were admitted. Of these, two cases only are worthy of special mention. One is the case already reported by Dr. Blake. In the other complete rupture of the perineum had taken place, through the sphincter ani, extending one and a balf inches up the bowel. The patient's condition at entrance was one of profound anemia, and the temperature was somewhat elevated. After two weeks of general tonic treatment the rupture was repaired, using fine silver wire and three catgut sutures. Owing to the extremely fragile condition of the perineal tissues the operation was quite difficult. Convalescence was normal. The bowels moved on the fourth day without disturbing stitches. On the tenth the stitches were rupture of the abscess took place in removal. removed, and excellent union found to have taken place. Nine days later the patient was discharged guishing tubal from other forms of pelvic inflammation with complete control of sphincter.

In a general way the indications for repairing a lacerated cervix were considered to be eversion and erosion of the endocervical membrane with cystic degeneration, to an extent sufficient to cause symptoms demanding relief. No cases were operated on which showed the presence of inflammation of the append-

Alexander's operation was performed nine times during the summer. In all but one case (that reported by Dr. Blake) the operation was successful, completely relieving the symptoms which called for its performance, and restoring the uterus to its normal position. The ligaments were found without special difficulty. In one case the operation was preceded by dilating and curetting for endometritis and retroflexion, in another case by plastic operations on the cervix and perineum. A case entered the hospital this week ou whom Dr. Blake performed an Alexander fourteen months ago. The uterus was found in normal position, and showed no tendency to prolapse when the patient was asked to bear down.

The indications for the performance of the operation were considered to be, briefly, retroversion of a freely movable uterus, without pelvic inflammation, where the cervix and perineum were practically intact, and where the symptoms were of sufficient severity to demand relief. The uterus was always replaced before the operation, and a pessary introduced. This was allowed to remain for two or three months. Curetting was considered one step of the operation in cases associated with endometritis.

As regards the operation of curetting there is little to be said. It has served an extremely useful purpose in the various conditions calling for its performance, such as endometritis, salpingitis, incomplete abortions and miscarriages, septicemia, flexions of the tient was unable to sit up without being dizzy, and she uterus, subinvolution, etc., in which conditions it has been repeatedly performed.

This operation was performed in one case where there was a large fibroid in the anterior wall of the uterus accompanied by slight antiflexion. Menstruation was irregular, and accompanied by extremely severe pain which had succeeded in producing a condition of marked neurasthenia. There was no menorrhagia or metrorrhagia. The uterus was dilated, curetted, and packed with gauze, in the hope that drainage might relieve the dysmenorrhea. The patient was kept under observation during her next period and suffered little or no pain.

Forty-five cases of pelvic inflammation were ad-

Four cases of malignant disease of the uterus were admitted for treatment. In one case the only local symptom was pain, in another hemorrhage, in a third foul discharge, while in the fourth these three symp toms were all present. In no case was a radical operation possible, as the disease had already extended beyoud the limits of complete removal. One case left the ward without being treated. The other cases were treated by first curetting away the diseased portions as far as possible, and then applying cotton squeezed out of a fifty-per-cent. solution of chloride of zinc. The surrounding healthy tissue was protected by means of bicarbonate of soda and dry cotton. The sloughs thus produced were from one-eighth to one-sixth of an inch in thickness. These applications were repeated until healthy granulations appeared, and the cavity began to assume a healthy appearance. This treatment proved itself very efficient as a means of palliation, helping very materially in alleviating the three distressing symptoms, pain, hemorrhage and foul discharge.

A series of sixteen abortion and miscarriage cases would seem to show that, previous to two and a half mouths, the retention of a portion of the ovum with sepsis or hemorrhage was comparatively uncommon. It would seem from the curetting of certain cases that hemorrhage after abortions was not always dependent on retained material, but upon an endometritis. In the case of one patient, who had just had her ninth criminal abortion, who seemed capable of judging and who declared that the ovum came away intact, a hemorrhage was started up two weeks later by a debauch. This hemorrhage was so severe that the pabecame very pallid. Under rest in bed the hemorrhage In nearly all of these ceased and did not reappear. cases the operation of curettage was necessary.

In nearly all the abortion and miscarriage cases, septicemia was present to a greater or lesser extent, especially when the induction of labor was due to the passage of instruments into the uterus. By means of curettage, corrosive intrauterine douches, and iodoform pencils introduced into the uterus an immediate reduction of the temperature and other symptoms was obtained in nearly all the cases, and in comparatively few was it necessary to enter the uterus a second time. One case only resulted fatally. It was a case of crimnal abortion, and was profoundly septic at entrance.

Of the cases not included in the above groupings, there are two which I have selected to report more in detail.

CASE I. Acute intestinal obstruction, the result of adhesions produced by chronic pelvic inflammation.

Admitted July 1st. Age twenty-six years, married, native of Ireland. Six months previous to entrance she gave birth to her first and only child, being delivered by means of instruments. Convalescence was prolonged. Never had any miscarriages. For about a month previous to entrance she had been feeling poorly, and was troubled with constipation at intervals. On entrance she complained of pain in the back and abdomen, painful micturition and defecation. Her temperature was normal, pulse 114. Vaginal examination, made the following day, showed the uterus to be fixed, and a mass in the posterior cul-de-sac, but nothing was found to account for the patient's acute symptoms.

Every effort was made during the next three days to open the bowels, but without success. The patient's condition grew steadily worse; she was unable to retain anything on her stomach, and flatulence became so intense that the intestinal coils could be plainly seen on the abdomen. A marked condition of shock. The vomitus was not intestinal.

Dr. Abner Post saw the case in consultation on the 3d of July, two days after entrance, and a diagnosis of intestinal obstruction was made. On the following day the patient was transferred to the surgical side in a semi-moribund condition, and Dr. Post performed a celiotomy.

An incision was made in the median line from the umbilicus to the symphysis, and a large quantity of sero-sanguineous fluid was evacuated. The small intestine was found dilated to about four times its normal size, and was purplish in color. The patient was then placed in the Trendelenberg position, and the uterus was seen to be enlarged but in normal position. The left tube was normal. The right was somewhat tortuous, running upward and backward in a curved line from the fundus of the uterus. Extending from the fundus of the uterus to the small intestine was a rather broad and firm adhesion. A similar but firmer adhesion extended from the right tube to the small intestine, drawing the latter into a decided knuckle. The large intestine was collapsed. Both extremities of these adhesions were ligated and the adhesions When this was done the small intestine began to lose its purplish color, and the collapsed large intestine began to inflate. The small intestine apparently took on peristaltic action. The abdominal cavity was douched out with distilled water, the abdominal wound was sutured and a baked dressing ap-

On the day, following the operation the patient passed some gas from the bowels, but no feces. On the 10th of July, no movement of the bowels having taken place, a high rectal tube was passed, and brought away a large amount of soft fecal matter. From this time to the 2d of August, the bowels were moved by enemata. Subsequently they were moved regularly by means of castor oil. On the 22d of August, the wound having healed the patient was discharged.

Case II. Premature senility. This patient was twenty-seven years and eight months of age, married, no occupation. The family history was excellent.

She had typhoid fever nine years ago. Menstruation first appeared when the patient was between fourteen and fifteen years of age. Before menstruation commenced she suffered from leucorrhea, and subsequently each period was preceded and accompanied by some leucorrhea. Menstruation appeared about once in three weeks, lasted about ten days, and was associated with much headache, bearing-down pains, and drowsiness, but no sharp pains. The discharge was thick, clotted and almost black in color.

When she was eighteen years old she had an attack of typhoid fever, and was confined to bed for about six weeks, making a slow convalescence. During the four months preceding the attack of typhoid fever menstruation became irregular, diminished noticably in amount, but would start up on the slightest exertion. She became very thin, much exhausted and would faint on the slightest provocation.

During the early part of her typhoid she menstruated, and since then has never seen a drop of blood. From that time until she was married five years later, about once a month she would feel as if she was about to be unwell, but nothing would appear. Since her marriage, which is now about five years, she has never been pregnant, and has suffered from painful coitus, which, however, is not accompanied by any disagreeable sensations.

On examination there was found a senile uterus and vagina, with a moderate retroversion, the same atrophic conditions as are found in elderly women who have passed the menopause. The ovaries were not felt. Her general development was excellent, and there was no impairment of the intellect.

Medical Progress.

REPORT ON THERAPEUTICS.

BY FRANCIS H. WILLIAMS, M.D. (Concluded from No. 24, p. 583.)

LOCAL TREATMENT OF DIPHTHERIA.

At the same Congress mentioned previously, Löffler² states that he does not wish to undervalue in any way the serum treatment, still he thinks it proper to give his experience in the local treatment of diphtheria. He found that a solution of sesquichloride of iron in equal parts (or 1 to 2), as well as other preparations of iron, killed the diphtheria bacillus in ten seconds.

He also observed that such substances as benzol and toluol hindered the growth of this bacillus. He studied the action of these substances first on animals and later on man. In treating man he used a solution composed of alcohol 64, toluol 36, creoline or metacresol 1 to 2. As this solution produced a strong burning sensation in children, he added to it ten per cent. of menthol. The solution is prepared in the following way: 10 grammes of menthol are put into a graduated cylinder; then toluol is added until the contents reach the level of 36 c. c. (the menthol dissolves rapidly in the toluol); then 2 c. c. of creoline, or 1.5 c. c of metacresol, or 4 c. c. of sesquichloride of iron, is added; and lastly alcohol enough to obtain a volume of 100 c. c.

The solution is applied twice in succession, for ten

² La Semaine Médicale.

seconds, on a cotton swab; and this application is repeated every three hours until all the local symptoms have completely disappeared. This takes place ordinarily at the end of four or five days. While the disease is still local its progress may be stopped by means of this treatment. In 96 cases thus treated, three-quarters of which were shown by bacteriological examination to be diphtheria, there was not a single death.

THE ANTITOXIN OF BACTERIAL FEVER.

Dr. E. Centanni and Dr. A. Bruschettini, have been carrying on investigations in Professor Tizzoni's laboratory in Bologna; and in an article in the Deutsche Medicinische Wochenshrift, 1894, No. 12, they state that Centanni has shown that fever is caused by a certain poison (pyrotoxina bacterica), which is the same in all kinds of bacteria; from this fact he drew the conclusion that the specific agent which would neutralize this poison must be as general in its action. Bruschettini observed while studying influenza that vaccinated animals very soon ceased to be affected by strong doses of the vaccine, and that the immunizing serum obtained from them not only prevented infection, but also very quickly produced a significant fall in the temperature.

The writers knowing from former experiments that the fever producing poison of the bacillus of influenza was like that of other bacteria, were inclined to believe that the immunizing serum for this disease would have the same effect against fevers produced by other bacteria, as far as its autipyretic action was concerned. They made three classes of experiment, which the authors state proved the correctness of this conclusion: first, with fever produced by an injection of pyrotoxin alone without the bacteria; second, with fever caused by an injection of cultures from bacteria of non-septic but of local action; and third, with fever produced by an injection of cultures from bacteria that produces septicemia in rabbits. The experiments had the twofold purpose of showing that this serum was preventive as well as curative. The serum used was obtained from sheep rendered immune against the bacillus of influenza, 1 to 4,000,000 being used in the im-The animals used were rabbits and munization. guinea-pigs; and in the first series of experiments poison from the spirillus of cholera or the vibrio of Metschnikoff or the bacillus of tuberculosis or from other bacteria was injected; in the second and third series of experiment cultures of the vibrio avicida, or of the spirillus of cholera or of the pneumococcus or of still other bacteria were injected.

The following experiments in which pyrotoxin from the bacterium of coli communis was used, illustrate the manner in which the work was done.

RABBI	T No. 1. SE	RUM	USEI	FQ!	R PI	LEVE	ENTI	DN.
July 27, 1893.								
94 A. M., t	emperature							39.8°C.
Inject	ion of 5 c. c. o	f ser	um.					
11 A. M., t	emperature .							89.4 °
Inject	ion of pyrotox	tin.						
1} P. M., t	emperature							40°
2 .	44							39.8 ^
8	••							39.8°
8}	4							39.6°
4	44		•	•	•		•	39.6 °
5	**					•	•	89.7°
5출	66	•	•	•			•	3 9.2°
(28th)9} A. M.,	**		•		•	•	•	39.8°
112	66	•		•	•	•	•	39.6 °
5 P. M.,		•		•	•	•	•	39.8 °
The rabbit rea	nained withou	it fet	rer.					

	BBIT No. 2.	SER	UM	USED	FOR	Cσ	RE.	
July 27, 1898.				•				
11 A. M., t	emperature							39.2°
	ion of pyroto:	xin.						
	emperature							40.9°
	ion of 5 c. c. c	f ser	ım.					
2 P. M., ter	mperature							39.0 °
8	•4							39.3°
왁	••							31.00
4	**							39.1°
5	44							39.2 °
54	**							39.0 °
(28th) 9 A. M.,	84							39 .50
111	44							39.5 °
5 P. M.,	41							39.3°
The rabbit res	nained witho	ut fer	er.					
R	mained withough No. 3.			l Ex	PERI	MR	ST.	
R./ July 27, 1893.	ABBIT No. 8.			L Ex	PER	MR)	et.	30 7 0
R.July 27, 1893. 11 A. M., to	ABBIT No. 8.	Cor		L Ex	PERI	mr)	et.	39.7 °
RA July 27, 1893. 11 A. M., to Injects	ABBIT No. 8. Simperature ion of pyrotos	Cor		L Ex	PERI	mr)	et.	
R.July 27, 1893. 11 A. M., to Injecti 1 J. P. M., to	ABBIT No. 8.	Cor			PERI		et.	40.9°
R.J. July 27, 1893. 11 A. M., to Injecti 1½ P. M., to 2	ABBIT No. 8. Simperature ion of pyrotos	Cor		L Ex	PERI		cr.	40.9°
R. July 27, 1893. 11 A. M., to Injects 1½ P. M., to 2	ABBIT No. 8. Simperature ion of pyrotos	Cor		L Ex	PERI	· · · · · · · · · · · · · · · · · · ·		40.9° 40.9° 40.7°
R.July 27, 1893. 11 A. M., to Injecti 1½ P. M., to 2 3 34	ABBIT No. 8. Simperature ion of pyrotos	Cor		. Ex	PERI		FT.	40.9° 40.9° 40.7° 40.8°
RJ July 27, 1893. 11 A. M., to Injecti 1½ P. M., to 2 3 8½ 4½	abbit No. 8. Simperature ion of pyroton simperature	Cor		L Ex	PERI	· · · · · · · · · · · · · · · · · · ·	ST. .	40.9° 40.9° 40.7° 40.8° 40.9°
R.J. July 27, 1893. 11 A. M., to Injecti 1½ P. M., to 2 3 8½ 4½ 5	ABBIT No. 8. comperature comperature	Cor		L Ex		· · · · · · · · · · · · · · · · · · ·	• • • • • • • • • • • • • • • • • • •	40.9° 40.9° 40.7° 40.8° 40.9°
RJ July 27, 1893. 11 A. M., to Injecti 1½ P. M., to 2 3 3 4 4 5 5 5	ABBIT No. 8. Simperature ion of pyrotor smperature	Cor					ST.	40.9° 40.7° 40.8° 40.9° 40.5° 40.5°
RJ July 27, 1893. 11 A. M., to 11 P. M., to 2 3 3 3 4 4 4 5 5 5 (28th) 94 A. M.,	ABBIT No. 8. Simperature ion of pyrotor smperature	Cor		L Ex			ST.	40.9° 40.7° 40.8° 40.9° 40.5° 40.8° 41.0°
RJ July 27, 1893. 11 A. M., to Injecti 1½ P. M., to 2 3 3 3 4 4 5	abbit No. 3. chiperature lon of pyrotos smperature	Cor		L Ex			ST.	40.9° 40.9° 40.7° 40.8° 40.9°

The writers take up one more point, namely, the continuance of the apyretic effect of the serum, and under this head relate the following experiment: An animal in which the poisoning from vibrio avicida had been neutralized by means of the serum was infected four days later with 5 c. c. of a culture from the cholera bacillus of Massana. In spite of this the animal remained well, not only as far as the temperature was concerned, but all other symptoms also; while the animal used in the control experiment died in fifty-three hours with very striking pyrotoxic symptoms.

The writers draw the following conclusions from the various experiments made:

(1) The serum of an animal which has been rendered immune against the fever produced by a certain bacillus (bacillus of influenza), has an autitoxic effect also on the fever produced by the most diverse bacilli and against their pyrotoxin.

(2) This effect is constant, strong and lasting, and extends not only to the temperature, but also to the secondary toxic symptoms, and is a means of prevention as well as of cure. In the first case it prevents the development, and in the second it stops the course of the fever.

(3) The effect of this serum extends still further, inasmuch as it renders animals immune for a certain time to later injections of bacteria and their pyrogenic product.

(4) The idea, already published by Centanni, namely, that the fever-producing poison of different kinds of bacteria is one and the same and common to all bacteria, likewise that the substance which counteracts the group of symptoms, is one and the same and common to all bacteria, is still further strengthened.

These results form the beginning of studies which the writers intend to carry on further, in order to choose the most efficient vaccine from all the bacteria and invest the animals used for immunization with the highest degree of immunity.

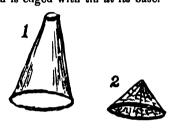
SEWER SANITATION. — By a system of windmills and paddle-wheels, the City of Mexico proposes to quicken the current in its sewers to one metre a second.

Pew Instruments.

A CONVENIENT FORM OF ETHER CONE.1 BY J. B. BLAKE, M.D.

This cone is not intended to be a perfected inhaler, nor is it free from all the objections that may be urged against almost all existing forms of etherizers. It is intended as a substitute for the towel and sponge on one hand, and for the clumsier and larger forms of more complicated inhalers on the other. It has been found to give satisfactory results, better than those obtained by other forms.

It consists of a hollow truncated cone of tin, five or six inches high, tapering from a long diameter of four inches at the base to about three-fourths of an inch at the top. The cone is flattened laterally, and its apertures are ovoidal. Into this fits a shorter cone of wire, which is edged with tin at its base.





Outer cone.
 Inner wire cone.
 Cotton waste, supported by inner wire cone.

The ether-bearing medium is clean waste cotton, which does not shrink as it becomes wet. The cotton is piled loosely on the wire cone, and thrust into the tin cone, where it is held by the pressure of the wire against the inner edge of the outer cone.

An ordinary rubber mouth-piece fits over the base of the cone, making a comfortable and air-tight joint around the mouth.

The cotton waste is made so loose, that the patient breathes through the cone with perfect ease — taking long, sudden breaths without any sensation of lack of air. The ether may be poured on from either end of the cone.

The advantages which this form of cone possesses are safety and comfort to the patient; cleanliness, lightness and readiness of construction to the physician. It is economical in its consumption of ether, and is itself inexpensive. All the air that enters the patient's lungs passes through the ether-laden waste; and no ether is evaporated from the sides of the cone, as is the case with the towel or sponge. The writer has etherized a patient, and continued complete anesthesia for two hours with less than two hundred grammes of ether; and, as a rule, anesthesia is produced easily in from six to nine minutes. The cone can be made by any tinsmith, and costs from seventy-five cents to one dollar and a quarter.

¹ Read, by invitation, before the Obstetric Society of Boston, October 13, 1894.

Reports of Societies.

THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

REGULAR Meeting, October 13, 1894, the President, DR. CHARLES M. GREEN, in the chair.

DR. J. G. BLAKE showed a child with congenital amputation of both arms, that he had exhibited before the Society six years ago.

Dr. F. W. Draper showed the uterus and appendages from a colored woman of thirty-four years, who had died of aneurism. The specimen showed multiple fibroid tumors, areolar hyperplasia, ovaritis and double salpingitis as well as cystitis.

Dr. J. G. BLAKE reported

CASES FROM THE UTERINE WARD OF THE CITY HOS-PITAL.1

DR. M. F. GAVIN in commenting on the case of extra-uterine pregnancy operated on by him, said that there was very free oozing at the time of the operation which could not be controlled, and on this account he put in a drainage-tube. On removing the drainagetube there was a smart hemorrhage which, however, was controlled by pressure. The wound was entirely healed before she left the hospital and she has done well since.

Dr. J. G. BLAKE thought that this was one of the cases that would have recovered without operation and in former times would have passed as hematocele. He would not, however, have dared risk the case without

Dr. GAVIN said the patient was continually losing blood, was in constant pain and an operation was, he believed, demanded.

DR. EDW. REYNOLDS said that when he first saw the case he advised waiting as her condition was so poor. The majority of cases with limited hemorrhage get well of themselves. He believed it a mistake to insert an aspirator in these cases, as there is little to be gained, and it involves an added danger of sepsis or in some cases of mechanical injury. In pelvic surgery the less the aspirator is used the better.

Dr. G. HAVEN would agree with Dr. Reynolds as to the dangers of the aspirator. Ruptured tubal pregnancies within the folds of the broad ligament take care of themselves. Those that rupture outside are the dangerous ones. In the last two years he has seen but one case of vesico-vaginal fistula and that only a minute hole which would admit only a probe.

Dr. D. W. Cheever said that about twenty-five years ago Dr. Hodges collected and published forty cases of vesico-vaginal fistula that he had operated on. This illustrates the difference in frequency of the affection then and now. He thought that the good success in Dr. Blake's case was partly due to the position required of the patient, lying on the face. This is a very painful one when long continued, as he had found in treating a man with an extensive burn of the back.

In a case of imperforate vagina he had treated some years ago he incised the hymen and let out a cupful of grumous fluid. To avoid contraction constant stretching by a glass speculum was needed. The patient afterwards married and gave birth to a living child. There is one place where an aspirator never does any harm, that is in tapping the bladder.

¹ See page 609 of the Journal,

DR. WM. R. STOKES showed the specimen from the case of tubal pregnancy. A corpus luteum of pregnancy was present; the Fallopian tube was dilated, and the chorionic villi were shown under the microscope.

Dr. J. B. Blake showed an ether inhaler of his

DR. J. G. BLAKE said he preferred the old-fashioned towel cone to any inhaler ever devised.

DR. M. F. GAVIN referred to an inhaler largely used in Dublin, namely, the Ormondely inhaler.

DR. C. G. CUMSTON had used this inhaler in some twenty-five cases. It saves ether no doubt, but it is rather difficult to manage, as the ether is apt to trickle down on the patient's face.

Dr. Cumston also read

A NOTE ON THE BROWIDE OF ETHYL.

Dr. A. D. Singlair referred to Dr. Worcester's remarks at a previous meeting on the use of this anesthetic.

MR. E. P. STARBIRD read

A REVIEW OF A SUMMER'S WORK IN THE GYNECOLOG-ICAL SERVICE OF THE BOSTON CITY HOSPITAL.4

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

SEVENTH ANNUAL MRETING, CHARLESTON, S. C., No-**VEMBER 13, 14 AND 15, 1894.**

FIRST DAY. - MORNING SESSION.

THE Association met in Artillery Hall, and was called to order by the President, Dr. C. KOLLOCK, of Cheraw, S. C.

An Address of Welcome was delivered by the

Mayor of Charleston.

DR. BRODIE, of Charleston, followed with an Address of Welcome on behalf of the local profession, and PRESIDENT KOLLOCK responded in behalf of the Association.

DR. WM. E. PARKER, of New Orleans, read a

MEMORIAL ADDRESS ON DR. WARREN STONE,

which was prepared by the late Dr. A. B. Miles, of New Orleans.

As Professor of Surgery in the University of Louisiana for thirty-five years, as surgeon to the Charity Hospital for thirty-eight, and as general practitioner from 1832 to 1872, whose experience covered eighteen epidemics of yellow fever and cholera in New Orleans, the name of Warren Stone is impressed indelibly upon the local history of a remarkable period. In his surgical clinics he taught the advanced surgery of the old school. He taught the principles of drainage in suppurative arthritis, in hepatic abscesses and in pyothorax. He advocated resection of the rib to facilitate the drainage in suppurative pleuritis. Whether in operative work or in the liberation of pus he made free incisions. He was among the first in the cure of aneurism of the vertebral artery. In the surgery of the arteries he was an expert. During fourteen years of his work at the Charity Hospital, he operated without an anesthetic. Realizing the difficulties under which he labored, he was ready to welcome the new era in surgery then about to dawn. The lives of many

men are mirrored in their books and published papers, but the writings of Dr. Stone give but meagre knowledge of his work, or his position as an authority on surgery in the South. No man in the profession of Louisiana was ever so universally beloved as Dr. Stone. In his relations with other physicians he was gentle and considerate, never intrusive or aggressive. Many of the physicians in Louisiana to-day who knew him in life, speak of him affectionately as "Old Stone," and always with some expression of endearment and respect. His position in New Orleans may be compared with that of Physick in Philadelphia, Mott in New York, Lister in London and Velpeau in Paris.

Dr. J. B. S. Holmes, of Atlanta, read a paper on GONORRHEA IN WOMEN.

He said there was no disease that affected women that should engage the serious and thoughtful consideration of the physician more than gonorrhea. The author then, after quoting Tait and Sinclair on gonorrhea, said he had no doubt but that many of the chronic diseases of the ovaries and tubes that came under the observation of gynecologists were due to this disease. In the majority of cases the poor woman was ignorant of the fact that she had had or has any specific disease. Indeed, her husband might tell the physician that months or even years before his marriage he was a subject of gonorrhea, which was cured and had since shown no evidence of a return.

The writer could conceive of nothing more dangerous than curetting the uterus in the presence of immense pus tubes with pelvic adhesion. The drawing down of the organ necessary for curettage may break up pelvic adhesion and pour out the contents of pus sacs into the peritoneal cavity, which would result in the majority of cases in death to the woman. If her life is saved at all, it will only be done by a prompt abdominal section, with thorough irrigation and drainage of the abdomen. Then why not, in the first instance, when pus is detected, promptly remove it by surgical interference. We then treat the women rationally and give her the very best and only chance of relief and restoration to health.

Dr. George J. Engelmann, of St. Louis, called attention to the importance of differentiating between latent or chronic gonorrhea and the acute form of the disease. He does not look upon acute gonorrhea as a dangerous disease in women, but he does the latent or chronic form. He has not seen serious results from the acute form, but it is the infection which is not observed, from a supposedly cured gonorrhea in the male, which produces the suffering in women.

Dr. Bedford Brown, of Alexandria, took exception to the statement made by Dr. Engelmann in regard to non-danger of acute gonorrhea in females, and cited the case of a female in which the acute gonorrhea ran its course, terminating finally in fatal nephritis. In this case there was first urethritis, then cysticis, urethritis, pyelitis, and acute nephritis.

Dr. RICHARD DOUGLAS, of Nashville, thought Dr. Engelmann had sounded the keynote in that there is quite a difference in the infection from acute gonorrhea and the latent form of the disease. Infection from the latter was a mixed infection, not only with the gonococcus, but with the streptococcus and staphylococcus also, and that accounts somewhat for the virulence of the trouble. That gonorrhea is the cause of uterine

<sup>See page 617 of the Journal.
See page 613 of the Journal.
See page 613 of the Journal.</sup>

fibroids, he could scarcely accept, although he thought Dr. Price was the author of that idea.

DR. JOSEPH TABER JOHNSON, of Washington, D.C., said in the treatment of pus tubes the result of gonorrheal infection, the very radical suggestion of Dr. Holmes was correct, namely, to resort to abdominal section, as he was satisfied that gonorrheal pus tubes were incurable by conservative measures. In addition to the removal of pus tubes, if present on both sides, the uterus should be removed also, because it is through the infected mucous membrane of the uterus that the tubes themselves have become infected.

DR. WILLIAM P. NICHOLSON, of Atlanta, said the general surgeon was concerned in the treatment of gonorrhea as well as the specialist. We are told that a urethra has been inflamed and subsequently restored to its normal condition, and yet years afterwards the man transmits gonorrhea to his wife. It is hard for him to accept such a doctrine. If a man goes for months and years with a gonorrhea absolutely producing no effect whatever, if he is not well, how are we to tell him that he is not? We are told by the writer that gonorrhea is contracted by the female when there is absolutely no evidence whatever of disturbance in the urethra of the male, or that there is no trouble by which he can propagate disease.

DR. A. M. CARTLEDGE, of Louisville, thought the essayist failed to differentiate between cases of subacute and chronic salpingitis and the cases of acute infection from gonorrhea. He threw out the suggestion that physicians were not fully conscious of the great prevalence of artificial abortions in young married women of the better as well as lower class, and he believes that in these cases of secondary infection from pathogenic organisms we have a more fertile source for the development of the tubular and ovarian disease than from gonorrhea.

Dr. W. E. B. Davis, of Birmingham, Ala., considered the disease a dangerous one. The views of Tait, however, in regard to gonorrhea were extreme. We had a frequent cause of tubal disease in the puerperal state, in delivery at term or in premature deliveries, frequently in artificial abortions brought about by mechanical means. More or less infection occurred after all cases of abortion; but if the patient was in good condition at the time, she would not be materially affected. If we had a soil that was favorable for the development of septic germs, we would get a severe inflammation — a mixed infection.

DR. W. D. HAGGARD, of Nashville, desired to place himself on record as opposed to the removal of the uterus and tubes for pyosalpinx as the result of gonorrhea, believing that by dilatation and judicious curetting patients can be relieved of an endometritis produced by gonorrhea.

DR. JOHN D. S. DAVIS, of Birmingham, Ala., emphasized the importance of using the microscope in connection with gonorrhea and carefully examining the pus. Experience had demonstrated that the latent effects of gonorrhea were not always directly due to the gonococcus per se, but to a mixed infection; that is, we had an inflammation as a result of the gonococcus, which was fired up by another infection from the streptococcus. When we had a mixed infection, we had as a result pus tubes, suppurative peritonitis, and finally death to the patient if surgical interference was not resorted to.

protest against the doctrine that a man can have gonorrhea and not get well. As for the idea that a man who has had gonorrhea should not get married, it was preposterous. He had seen thousands of cases get well and remain so.

Dr. Holmes, in closing, said he was aware that many cases of acute gonorrhea resulted in no secondary trouble, because they were recognized early and cured by judicious treatment. He did not wish to be understood as endorsing the views of Mr. Tait, that gonorrhea in the male was never cured; but he insisted that general practitioners were often too careless in advising patients who had been the subjects of gonorrhea to get married.

SOME CASES OF ACUTE INTESTINAL OBSTRUCTION. WITH DEDUCTIONS.

was the title of a paper read by Dr. A. MORGAN CARTLEDGE, of Louisville, in which he reported six cases, three of which terminated fatally. The author said that the limited number of operated cases reported in his paper, together with an individual observation of probably as many more not subjected to operation, conformed to the accepted belief of the hopeless nature of acute intestinal obstruction unless treated by early laparotomy.

In the afternoon, the members of the Association were taken on a special train to Professor Shephard's tea plantation and to the Forest Inn.

SECOND DAY .- MORNING SESSION.

Dr. F. W. McRAE, of Atlanta, Ga., read a paper entitled

HERNIA OF THE DIAPHRAGM, WITH REPORT OF A

Dr. Louis McLane Tiffany, of Baltimore, Md., read a paper on

GUNSHOT WOUND OF THE SPLEEN AND KIDNEY; ABDOMINAL SECTION; HEMOSTASIS BY DEEP SU-TURE; RECOVERY.

The patient was a male negro, twenty years of age. Two hours previous to entering the Maryland University Hospital, March 21, 1894, he had been shot with a small calibre rifle from a distance of twenty feet, the weapon being directly behind him, and he being erect. His urine was slightly albuminous; the pulse, temperature and respiration normal. was a bullet wound three inches to the left of the spine, just below the last rib, from which blood After properly cleansing the wound it was oozed. enlarged; and it was found that the kidney had been injured and that a bullet had passed onward, presumptively into the peritoneal cavity. The wound was filled lightly with gauze by the resident physician, and Dr. Tiffany was notified. External examination of the abdomen by touch and palpation revealed nothing, not even painfulness.

The patient was anesthetized, laid on the belly, and the wound, after being enlarged, was examined. upper portion of the left kidney was perforated, and dark blood flowed from the peritoneal cavity beyond. This large wound was filled with gauze, the patient turned on the back, and the abdomen freely opened along the left semilunar line. A moderate amount of blood was free in the peritoneal cavity; no wound of the intestine could be discovered, but the spleen was DR. HUNTER McGuire, of Richmond, entered a found perforated, blood flowing freely from the wound of entrance, as well as from the wound of exit: the latter wound, in the concavity of the organ, was The perforation slightly the larger of the two. through the spleen was about three inches from the free lower border. Unwilling to subject the patient to splenectomy, the essayist attempted to arrest the bleeding in the following manner: a long needle threaded with silk was passed entirely through the spleeu, central to and parallel with the bullet track; the long ligature was then tied over the free border of the organ so as to press the surfaces of the wound together tightly enough to arrest bleeding, yet not to tear through the splenic tissue; the ends of the ligature were cut short, the peritoneal cavity cleaned by copious irrigation with hot water, and the abdominal wound closed. The kidney was tamponed with gauze through the dorsal wound. Convalescence was uneventful. The anterior wound healed by primary union. Urine flowed from the dorsal wound for two days only, union by granulation taking place. The patient left the hospital well, April 22d.

In this case, the wound being small, hemorrhage was not profuse, and no abdominal organ save the spleen was wounded.

Dr. WILLIAM PERBIN NICOLSON, of Atlanta, Ga., next presented a paper upon the report of a

A SEVERE CASE OF NEVUS, WHICH WAS ONLY CURED BY THE USE OF GALVANO-PUNCTURE.

The case was one of a large growth occupying the groove from the angle of the jaw up to and covering a portion of the ear, and extending out upon the cheek, the entire tumor being almost the size of a hen's egg.

After detailing the method employed, the writer stated that he thought several elements entered into attaining the result, of which the coagulum of the blood was one, and perhaps the least. The two remaining elements were the subsequent contraction of the small eschar produced in radiating lines from the tumor, and the effect of the current upon the vasomotor-nerve supply. He felt sure that a thorough trial of this method as to the settling of the various points considered, would result in its adoption in the treatment of perhaps a large majority of these cases where we have a large elevated blood tumor with which to deal. He also believed that perhaps pricking the surface with the needle attached to a positive pole of the battery, might result in a series of small scars, which would end in removing the ugly port-wine marks so common in this trouble.

OPERATION FOR COMPLETE PERINEAL LACERATION.

This paper was read by Dr. JOSEPH PRICE, of Philadelphia, in which he said that there are many men who, essaying to be authorities on the surgical diseases of the major order, have no conception whatever of injuries of the perineum and cervix, so far as their intelligent repair is concerned. Indeed, there are many with a large obstetrical practice, who labor under the delusion that they have never ruptured a perineum, and that all their patients have entirely normal perinea. This misconception is due to improper teaching more than to any other cause. Perineal lacerations, unless extending through the skin to or through the sphincter, may escape detection unless by thorough digital examination.

surgical lesions to be repaired in the line of their anatomical destruction, and not as cosmetic operations, whose object is to obtain superficial appearances without regard to perfection and utility. Heaping up of tissue outside the lines of resistance and tension, or mere thickening of mucous membrane and skin does not make a true perineum, neither does a set of outside sutures, however much they may draw the parts together, afford any anatomical counterpart of a perineum. From this basis all the so-called outside flapsplitting operations for perineal tears are only puckering operations, bringing parts within the sutures that have never been severed, and in many cases taking them out of their proper relations. Big sutures, heavy ligatures, clumsy instruments have no more place here than in other surgery. The ordinary short, strong sewing-needle fills the bill exactly in most cases, though the Emmet fine short needle for general use is to be preferred. Silkworm-gut or silver wire is the prefer-The Emmet operation, as originally able suture. suggested and afterwards modified by its distinguished deviser, is the foundation for all successful operations on the lacerated perineum, either with or without sphincter tear. Dr. Price, in closing, said the tears of perinea are often unavoidable, but their restoration is always possible, and their neglect is criminal.

After the reading of Dr. Price's paper, Dr. ENGEL-MANN took the chair, and PRESIDENT KOLLOCK delivered his

ANNUAL ADDRESS.

He first thanked the Association for the honor con ferred upon him in electing him as President. then alluded to the death of Drs. William T. Briggs, of Nashville, and A. B. Miles, of New Orleans. Briggs's life had been one of usefulness. He had done excellent and remarkably brilliant work, and had achieved an enviable reputation. Dr. Miles, who had been made Professor of Surgery in Tulane University, was a man full of youthful activity and manly vigor, who by patient study and diligent research, aided by a brilliant intellect, had won for himself a high position in the profession and in the estimation of his fellowmen. To know him was to admire and love him. "His life was gentle, and the elements so mixed in him, that Nature might stand up and say to all the world, 'This was a man.'

While in all branches of gynecology good progress has been made, he noted with pleasure that surgery had had its triumphs. Many reports of cases show enlarged experience and continual improvement in the treatment of appendicitis, hernia, intestinal obstruction, and many other ills that flesh is heir to.

OBSERVATIONS ON THE ACTION OF CHLOROFORM ON THE FUNCTIONS OF THE HUMAN BRAIN AND SPINAL CORD, AS WITNESSED IN EXTENSIVE INJURIES OF THE CRANIUM AND BRAIN.

Dr. Bedford Brown, of Alexandria, Va., read a paper on this subject.

Dr. Brown cited the history of two cases of extensive compound comminuted fracture of the os frontis and serious injury and destruction of a portion of the frontal lobes of the brain, as the basis of his paper. One of these cases of injury was caused by a kick of a newly-shod horse, the other by a spent grape-shot in battle. The subjects of both of these injuries retained All these tears should be approached as distinct perfectly their powers of consciousness and sensation.

The history of the first case was published in the October number of the American Journal of Medical Sciences, 1860, and occurred in the summer of that year. The fracture in that case involved a large portion of the os frontis. The fractured bones were driven back into the substance of the brain quite an inch in depth lacerating the frontal lobes extensively. There was a loss of about two tablespoonfuls of brain. During the operation, which lasted more than an hour, the patient was placed under a compound of chloroform three parts, ether one part, four different times. Through this large opening in the skull the brain could be seen perfectly, and its varying changes of action under chloroform could be observed perfectly. The invariable action of the anesthetic was to suppress hemorrhage, to quiet cerebral pulsation and to positively reduce circulation in the brain and arterial tension. These peculiar effects were observed as many as three or four different times. When the patient was threatened with collapse from chloroform, stimulants injected in the rectum produced increased circulation and arterial tension in the brain promptly. struggling, mental excitement, or resistance while inhaling chloroform caused marked increase in cerebral circulation and pulsation with increase of hemorrhage.

The second case was that of a Confederate soldier, who in battle received a spent grape-shot in his forehead, causing an extensive compound comminuted fracture of the os frontis, driving the fractured bones back more than an inch into the frontal lobes. The wound in the skull was quite two inches in diameter, and more than an inch in depth. This patient was subjected to chloroform three times during the operation, which lasted an hour. The action of chloroform on the functions of the brain in this was similar to that in the first. When under full anesthesia each time the cerebral hemorrhage ceased, the cerebral pulsations diminished to a mere tremor, and the arterial circulation was markedly reduced. This occurred three different times during the operation. The action of alcoholic stimulants resorted to in this case to prevent collapse from chloroform increased the cerebral pulsations and circulation in a positive manner.

Dr. Joseph Taber Johnson, of Washington, D.C., described a case of

HYDRO-PYONEPHROSIS; SUCCESSFUL REMOVAL OF A FORTY-POUND TUMOR OF THE KIDNEY.

The patient was sixty-three years of age, and had inherited and possessed, until five years ago, a remarkably good constitution. At this time a lump appeared in his right side in the region of the liver, and it was supposed up to the date of the operation to be caused by enlargement and abscess of that organ. This lump gradually increased in size, and the patient had gradually lost flesh and strength until the date of the removal of the lump, when he could not have weighed more than eighty pounds. At no time did he suffer from pain, and only a few weeks with fever.

There were several points of interest in this case. A number of good men failed to make a diagnosis, though the patient was under observation for nearly five years. Repeated examinations of the urine failed to detect the slightest evidence of disease of the kidney; the only explanation the writer suggests is that the disease at the time of analysis and subsequently had so destroyed the function of the kidney as to prevent the escape of any urine at all, and that the speci- conditions of adjacent and remote parts.

men examined came from the other organ, which fortunately was healthy. Other points were the failure of such large quantities of foul-smelling pus to produce more sepsis; the absence, all through the history, of pain or fever; the median line incision; the separate ligation of the renal vessels; and the ligation and dropping of the ureter.

The writer is aware that the lumbar incision is preferred by nearly all nephrectomists, and that they often bring out the cut end of the ureter and fasten it to the abdomen. While the lumbar incision may be best in small tumors and otherwise disease of kidneys, it certainly could not have succeeded, the author believes, in a case of the magnitude of the one here reported, not only on account of the tumor's great size, but also because of its being so extensively adherent to the omentum and abdominal wall. The colon had to be carefully separated from anterior surface of tumor.

(To be continued.)

Recent Literature.

Essentials of Chemistry and Toxicology, for the Use of Students in Medicine. By R. A. WITTHAUS, A.M., Twelfth edition. New York: William Wood & Co. 1894.

This volume contains 1,129 questions with answers, adapted from the author's excellent "Manual of Chemistry." It is the best of the numerous small volumes which have been prepared for the use of medical students, and can be recommended to students, who need a small book of this kind, as a safe guide for them in their studies.

A System of Oral Surgery. Being a Treatise on the Diseases and Surgery of the Mouth, Jaws, Face. Teeth, and Associate Parts. By Dr. James E. Gar-BETSON. Sixth edition, thoroughly revised, with additions. Philadelphia: J. B. Lippincott Co.

Dr. Garretson's system of oral surgery has for many years had an important place amongst the text-books for the dental student and practitioner. In one volume it is not only a treatise upon the teeth and their diseases, but also a treatise upon the affections of all surrounding parts. It is a condensed medical and surgical reference book for the area which it professes to cover.

The present edition is much larger than the last, and printed in a more attractive form. Of the chapters of special interest might be mentioned the one on anesthesia and anesthetics. While due consideration is given to ether, nitrous-oxide gas, and chloroform, something is said about all the more modern anesthetic agents. Of the latter class cocaine holds an important place; and its uses about the mouth and face. both in local and systemic application, are carefully described.

The surgical engine naturally claims the author's notice. Probably no one has had a larger experience than Dr. Garretson with this instrument in operations connected with the maxillary bones, and his testimony as to its helpfuluess is very decided.

The book is of especial value in showing, at great detail, the relation which exists between abnormal conditions of the teeth and their alveoli, and abnormal

THE BOSTON

Medical and Surgical Journal.

THURSDAY, DECEMBER 20, 1894.

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TREPHINING FOR TUBERCULOUS MENINGITIS.

This disease has long been the despair of the general practitioner who is often called upon to treat cases of chronic hydrocephalus, and recognizes the utter hopelessness of all the classical modes of treatment. It is known that children often die of tuberculous meningitis in consequence of the inflammatory process and the presence and pressure of the exudation, long before the tuberculous deposit has undergone any considerable development.

So dominant a symptom is the intracranial pressure that practitioners have recognized a leading indication to lessen the pressure by medical or surgical means, and calomel in frequent doses has been prescribed with this end in view; blisters and leeches to the temples, shaved scalp and nucha have been counselled; iodide of potassium has been given to promote absorption of the exudate, and other means equally as inefficacious have been resorted to.

Ziemssen and Quincke, in Germany, and Veyrat, in France, have proposed, in order to diminish the intracranial pressure, to puncture the spinal canal in the lumbar region and to insert a tube, to be left there, in order to give escape to the cerebro-spinal fluid. According to Hirschberg, who has written an able treatise on this subject,2 this method is irrational, for the conditions of communication between the spinal and intracranial liquid in the physiological state cannot be the the same as in tuberculous meningitis, . . . and the puncture of the rachidian canal cannot efficaciously remedy the increase of intracranial pressure. He believes, in fact, that " with the swelling of the cerebral substance (the bony tissue not yielding under the pressure), a real strangulation takes place at the level of the occipital foramen." The only rational method to diminish this pressure is to make an opening in the cranium itself, that is, to trephine the skull with con-

Bull, gén. de Thér., 1894, p. 412,
 Deut. Arch. f. klin. Med., t. xli, and Thèse de Heidelberg, 1886.

secutive drainage. Trephining, according to Hirschberg, apart from relieving pressure, fulfils still another indication. We may, to a certain extent, liken tuberculous meningitis to tuberculous peritonitis. Now we know that the simple opening of the peritoneal cavity with drainage of the fluid, sometimes brings about the cure of peritonitis. Why may not drainage of the arachnoid spaces produce the same good result (in some way we cannot yet explain) in tuberculous meningitis?

Many years ago, Henoch, in a clinical lecture on tuberculous meningitis, anticipated the possibility by opportune trephining of arresting the commencing inflammation of the pia mater, and preventing a more extensive exudation which might affect the cortical substance of the brain.

It is true that there is as yet little to offer in favor of this procedure except theoretical considerations. The case of Ord and Waterhouse is, however, of the deepest interest in this connection, and can but stimulate to further efforts in the same direction, seeing that all other modes of treatment in this formidable disease are of so little benefit. The little patient whose case these writers report in the London Lancet, March 10, 1894, seems indeed to have been afflicted with tuberculous meningitis with effusion and recovered after tapping the membranes, but the fortunate result made it impossible to state absolutely that the meningitis was tuberculous, and not of pneumococcus or some other microbian nature. The principal points in the case are as follows:

A little girl, five years of age, was admitted to the Victoria Hospital, Chelsea, October 23, 1893. About the middle of September she began to have severe pain in her head; had occasional vomiting, was fretful, her appetite was bad, bowels constipated. There was no history of tuberculosis in the family; the child had never had fits or otorrhea. She lay with her h-ad bent forward and her legs drawn up, uttering shrill screams now and then. Tem; erature 101.6° F, pulse 104, respiration regular. Tache cérébrale was well marked. There was commencing optic neuritis in both eyes, especially in the left. During the first night she was very restless, constantly screaming. The optic neuritis became more marked. Patient kept gerting worse; pulse came down to 70 per minute with inte missions. The child became lethargic and apathetic, only uttering the typical hydrocephalic cry; had the appearance of one rapidly passing into a state of coma. Abdomen was retracted, face pale. Temperature 101° F. Pupils, contracted on admission, had become dilated, but there was no ptosis or strabismus, no opisthotonus.

The surgeons attending and the entire medical staff diagnosticated the case as tubercular meningitis, of which there were distinct signs, as evidenced by the great pain and optic neuritis; there was plainly increased intracranial pressure, and a stage bordering on coma; in fact, there was a probability of death taking place in a few hours from compression. From these considerations it was agreed that an operation for the relief of the pressure was both justifiable and advisable. It was decided to open the sub-arachnoid space and to drain this space for a few days.

At five o'clock, P. M., October 26th, the child was placed under chloroform and a curved incision about two and one-half inches in length was made over the left cerebellar foesa of the occipital bone, commencing below and behind the mastoid process, passing with its convexity upwards and ending externally to the external occipital crest. The occipital artery bled freely and was tied, and the perioranium was raised in a flap corresponding to the scalp flap. A trephine three-quarters of an inch in diameter was then applied midway between the ex-

ternal occipital crest and the mastoid process. The disc of . bone removed was placed in a warm boric solution. The dura mater, which bulged into the trephine opening, was then incised and some thirty drops of a slightly greenish serous fluid escaped. The cerebellum then bulged into the foramen in the skull, fitting it tightly, like a cork in a bottle. A silver probe, the terminal half-inch of which was bent to a right angle with the rest of the instrument, was then inserted between the cerebellum and the arachnoid inwards towards the falx cerebelli. As soon as the latter was felt, the probe was rotated, so that the end projected forward into the large sub-arachnoid space between the cerebellum and the medulla. Some drachms of serous fluid at once escaped. A drainage-tube was then passed along the probe and left in position; it was found that fluid passed slowly along it. The dura mater was then sutured, and the disc of bone having been cut up into small fragments with bone forceps, these were packed carefully in a mosaic, after the manner of MacEwen, so as to fill the foramen, leaving only room for the drainage-tube in the centre. The latter was then brought out through a hole made in the centre of the flap; the flap was readjusted with horse-hair sutures and the wound was dressed with cyanide dressings. The child bore the operation well, and the pulse rose from 80 to 120 after removal of the finid.

The sequel of the operation was favorable in every respect. The temperature and pulse became normal, after fitful exacerbations and remissions. The dressings on the second day were soaked with blood-stained serous discharge. The coma passed off; the child became sensible; was free from pain; slept naturally. The optic neuritis still existed. On the 30th, "the dressings were soaked with a colorless discharge, evidently cerebro-spinal fluid." The following days the discharge was profuse. From November 6th to 20th, "the wound suggested strongly a tuberculous infection, with its gelatinous-looking granulations and thin, watery discharges." The tube was removed on the 13th. The temperature during this period varied from subnormal to 103°, rising and falling fitfully; the swelling of the optic discs was lessened. The following week there was still more marked improvement. On November 50th the child was apparently quite well. About the middle of December she had an attack of measles, from which she recovered without a bad symptom.

It is to be regretted that in this case none of the hospital staff took the pains to examine for Koch's bacillus the liquid which escaped through the trephine opening. The attending surgeons, however, regarded it as a clear case of tuberculous meningitis; and to the argument "that it could not have been a case of tuberculous meningitis because the patient recovered," they reply that this same objection would have been used twenty years ago in a case of tuberculous peritonitis, and it is now known that there is a spontaneous cure in a certain number of cases of this disease and that cures sometimes follow laparotomy. They believe that the case which they have reported belongs to the well-known type in which the tubercles are few and the fluid effusion large in quantity. In favor of the tuberculous nature of the affection from which their patient suffered, they refer with considerable emphasis to the prominent symptoms: the hectic temperature, the occasional vomiting, and the persistence of the double optic neuritis.

It is noteworthy in this connection that Parkin, of Hull, has related four cases in which he performed an operation of the same nature, with complete recovery of one child who suffered from chronic hydrocephalus. The operation as performed by him was in the same part of the cranium as that of Ord and Waterhouse recorded above.

AFTER-EFFECTS OF ANTITOXIN.

DR. CNYRIM, 1 gives a careful clinical history of two cases of an urticaria-like eruption, attended with fever, pain in the muscles and joints, and enlargement of the inguinal glands. Both the cases occurred in assistant physicians of the Hospital Zum Heiligen Geist at Frankfort.

In the first case, the antitoxin had been administered for a mild attack of diphtheria, in which the Klebs-Löffler bacilli were found. The temperature fell to normal in three days, and the throat cleared up; but the patient in the next few days suffered from marked prostration. Five days after the temperature became normal, the eruption appeared (beginning at the site of the injection), the muscular and joint pains were severe, the temperature high, and two weeks elapsed before the patient was able to go home.

In the second case, the antitoxin was injected as a matter of precantion, although bacteriological examination of the throat failed to show Klebs-Löffler bacilli, and the case was considered one of slight catarrhal angina. Two days after the injection, there was loss of appetite, sleeplessness, weakness and malaise, soon followed by fever and general glandular swelling, and on the eighth day by an urticarial eruption. The patient was unable to go home for three weeks.

The coincidence in time, and exact similarity between these two cases leads Dr. Cnyrim to conclude that they are without doubt after-effects of the antitoxin. It is noteworthy that both these cases were rather serious, the temperature reaching 89.5° and 89.6 C. respectively, both patients affirming that they would much rather go through a mild attack of diphtheria than the disease from which they were suffering. Dr. Covrim also thinks that such an attack would be a most serious complication in a child already weakened by diphtheria. It will be remembered that in our last issue the occurrence of two cases in Berlin, similar to those just described, was noted. Although all four of the cases recovered, they were serious enough to show that diphtheria antitoxin may produce some unpleasant results. In the Frankfort cases the Behring antitoxin was employed, and the injections were made under most careful antiseptic precautions.

THE NEED OF A REGISTRATION LAW IN MAINE.

This is the subject of an editorial in the new Journal of Medicine and Science — an almost pathetic appeal for the protection of the Maine public against quacks and imposters. Flagrant instances are cited of the damage done by travelling "oculists," one of whom fitted no less than twelve patients in one day, with the same sort of prismatic lenses, all with the bases turned out. Another case cited is that of an "oculist" claiming residence in New York, who operated for double cataract, collected his fee and departed promptly.

I Lancet, July 1 and November 18, 1898.

¹ Deutsche Med. Woch., No. 48,

There was no recovery of vision of either eye. According to the journal, the registration laws which have been passed in other States have driven into Maine, crowds of medical tramps, who go there for a place of refuge and a chance to swindle.

The editorial further says: "When merchants of good standing in other States come to Maine they have to pay a license like common peddlers! Ought not foreign doctors to do the same? Have not tax-paying physicians some rights to the same protection that is given to buyers and sellers of merchandise? But better still, to leave aside the mercantile aspect of the case, the health and the sight of the people of our State would be better off by having better physicians; and to get better ones all the time, and to keep out the bad ones, we need a registration law of some sort to be fought after with united efforts till success is gained."

We hope the good fight may result in at least as much of a registration law for Maine as that wrung from its legislature for the State of Massachusetts. In the meantime Massachusetts can spare to Maine or any other State some of her registered practitioners.

MEDICAL NOTES.

SMALL-POX IN CHICAGO. — The number of cases in the small-pox hospital during the last four months has fluctuated between forty-two and eighty.

THE ANTITOXIN TREATMENT OF DIPHTHERIA. Börger reports in the Deutsche Med. Wochenschrift, November 29th, the results of 30 cases of diphtheria treated with Behring's antitoxin at Greifswald. Of the 30 cases, 28, or 93 per cent. recovered. In five of the cases tracheotomy was done, with four recoveries, or 80 per cent. According to Börger, the disease at Greifswald is usually comparatively mild during the autumn season. These cases were under treatment in August, September and October. Kuntz, in the same journal for December 6th, reports 25 cases treated at the Hospital in Oschersleben, with 22 recoveries, or 88 per cent. In two of these tracheotomy was done, and both recovered.

Antitoxin Legislation in FRANCE.— The Paris correspondent of the Medical Press writes (November 28th), that, in view of the danger to the public likely to arise from the uncontrolled manufacture and sale of curative serums and antitoxin, the French Government is invited to incorporate in the bill Regulating the Practice of Pharmacy, a section specially dealing with this class of remedies. In order to ensure that the horses employed in the preparation of serum are perfectly healthy, and generally to provide for the requisite skill and care being brought to bear, the following clauses are proposed: That attenuated virus, therapeutical serum, modified toxines, and similar products intended to be used in the prophylaxis or treatment of contagious diseases, can neither be sold quiry, and to inspect such places as it may deem expe-

nor distributed gratuitously without a personal permit to be accorded by the Government on the advice of the Council of Public Health and the Academy of Medicine, such permit to be temporary, and its maintenance to be subject to the result of periodical inspections by a special commission. The products in question are to be sold exclusively by duly qualified pharmacists and each phial is to bear the source and date of the preparation. Provided always (as the lawyers say) that these regulations will not be held to apply to Jenuerian vaccine, whether human or ani-

A THIRD FATAL KNOCK-OUT.—From New Orleans comes the report of the death of a pugilist from the effects of a blow received on the point of the jaw during a sparring contest. The victim did not regain consciousness, and died about ten hours after the accident. As the result of an autopsy the coroner's verdict was that death occurred from concussion, probably due to the head striking the hard floor. This is the third fatal sparring accident reported within four weeks.

DANGERS OF GOLF. — A physician reports a case of rupture of muscular fibres in the thigh of a powerful athletic man whilst playing golf. All sports are dangerous, and some are brutal.

WHY WAS DR. JUDSON DALAND DROPPED FROM THE BOARD OF THE PHILADELPHIA HOSPITAL? -The Philadelphia Board of Charities and Correction has appointed Dr. Hobart A. Hare a member of the staff of physiciaus at the Philadelphia Hospital, in place of Dr. Judson Daland, who has been dropped. The reason given for this action on the part of the board is, that Dr. Daland is alleged to have allowed certain patients suffering from malaria to go untreated for a certain length of time in order that he might study the development of the peculiar organism which produces malaria. To a board capable of such action for such reasons it probably makes very little difference what criticisms may be made upon its action, but we think it likely that the medical profession and the medical press will not rest content without knowing more and saying something about such a policy.

ROYAL COMMISSION ON TUBERCULOSIS.—An announcement is made in the Gazette of the names of Her Majesty's Commissioners of Inquiry into Tuberculosis. The appointments are, Sir George Buchanan, Mr. George T. Brown, C.B., Dr. Payne, Dr. Burdon Sanderson; while Mr. C. E. S. B. Hudson, F.R.C.S., is to act as Secretary to the Commission. The exact object of the board is "to inquire and report what is the effect, if any, on human health of food derived from tuberculous animals; and, if prejudicial, what are the circumstances and conditions with regard to tuberculosis in the animal which produces that effect upon man." The usual powers are vested in the commission to summon and examine such witnesses as it may think proper, and to call for any books, papers and documents necessary for the purposes of this indient. The commission previously appointed by royal warrant of July 21, 1890, is revoked and determined in favor of the present inquiry.

THE DISINFECTION OF MEDICAL FEES .- Professor Demosthenes, of Bucharest, according to the Bulletin Médical, calls attention to the danger of the transmission of contagion by fees received from patients suffering from contagious diseases. He contends that such money ought to be kept in a pocketbook of metal or impermeable cloth, which can be sterilized by the flame or by boiling, and that the physician ought to disinfect his hands before leaving the sickroom. This last rule is certainly one which ought to be followed, whether the physician receives money or not. During the present hard imes, there is little danger, at least in this country, from the transmission of contagious diseases by physicians' fees, as these fees are not paid in most instances till months after the patient has recovered. The danger would appear to be far greater to the butcher, grocer, etc., who are paid much more promptly than the physician.

A DEATH UNDER CHLOROFORM ANESTHESIA .-The Lancet for December 1, 1894, gives an account of a death under chloroform anesthesia in dental practice. No disease of the heart was found at autopsy, but as there was no evidence of suffocation, the cause of death was thought to be heart-failure.

THE SANITARY CONDITION OF PARIS .- During the three months ending October first the weekly mortality of Paris was less than usual by fully one hundred deaths. Cases of typhoid, scarlatina, smallpox, measles, in fact, of all infectious diseases except diphtheria, were of very rare occurrence. The same low mortality is said to have obtained in London and throughout the whole southeastern part of England. The mean mortality for the three months, ending October 1st, in England and Northern France, fell to 14.2 per 1,000, the average for this time of year being 20.2 per 1,000. The mortality from infectious diseases was 1.92, in place of 2.96 per 1,000.

A REMARKABLE TUMOR OF THE SCIATIC NERVE. - In the Medical and Surgical Reporter for November, 1894, Morton reports a cure of sarcoma of the sciatic nerve, occurring in a woman forty-two years old, which he was able to remove without severing the continuity of the nerve or causing loss of power in the leg. Three months after the operation the patient remained quite well. Although the tumor was a large one, measuring four inches in length, and seven in circumference, and had been developing about a year, it had caused little or no discomfort, and no history of sensory or motor disturbance of the distribution of the sciatic could be obtained. To pressure and palpation the growth was almost insensitive.

BOSTON AND NEW ENGLAND.

ing the week ending at noon, December 19, 1894, there eral's suit to compel the city to pay its share of the

following numbers of cases of acute infectious disease: diphtheria 120, scarlet fever 74, measles 40, typhoid fever 17.

PREPARATIONS FOR SUPPLYING DIPHTHERIA AN-TITOXIN. — The Massachusetts State Board of Health has several horses already under inoculation with the diphtheria toxin, and expects ultimately to be in a position to supply considerable quantities of the antitoxin. Suitable horses can be obtained for a very small price. The Boston Board of Health is also getting ready to furnish a supply to the public institutions of the City.

PROTESTS AGAINST THE SLAUGHTER OF TUBER-CULOUS CATTLE.— The farmers in Worcester and Bristol Counties, are vigorously protesting against the action of the Massachusetts Cattle Commissioners in enforcing the law with regard to the tuberculin test. The farmers maintain that the tuberculin test is not reliable, and also that they ought to receive as compensation for the loss of a tubercular animal the full value of a healthy one. The cattle commissioners are in a better position to judge of the value of tuberculin than the farmers, and as to the second point of contention, it is human nature to try to get as much as possible, but commissioners may well ask why they should be obliged to pay the full value of a healthy cow in order to save themselves from drinking the milk (paid for at regular rates) from a diseased one.

THE OYSTER EPIDEMIC OF TYPHOID FEVER AT WESLEYAN UNIVERSITY. - H. W. Conn, M.D., Professor of Biology in Wesleyan University publishes in the Medical Record an account of a careful and thorough investigation of the epidemic of typhoid fever at Weslevan University. The facts ascertained by Dr. Conn prove conclusively that infected oysters were the cause of the outbreak.

THE VERMONT MEDICAL MONTHLY .- A DOW medical journal will be published under this name at Burlington, Vt.

THE MAINE ACADEMY OF MEDICINE. - This new organization held its first meeting November 12th. The object of the Academy is stated to be "The promotion of the science and art of medicine; the public health and the maintenance of a medical library." Its range of Fellowship is to be as wide as that of the American Public Health Association which includes physicians, dentists, apothecaries, lawyers, ministers, civil and sanitary engineers, architects, health officers, teachers, plumbers, merchants, etc. The officers are: President, S. C. Gordon, M.D.; Vice-Presidents and Presidents of Sections, S. H. Weeks, M.D., C. A. Ring, M.D., L. W. Pendleton, M.D., A. K. P. Meserve, M.D., E. E. Holt, M.D., E. C. Jordan, C.E., B. B. Foster, M.D.

NEW YORK.

NEW YORK CITY TAXED FOR STATE INSANE. -ACUTE INFECTIOUS DISEASES IN BOSTON. - Dur- It is announced from Albany that the Attorney Genwere reported to the Board of Health, of Boston, the State tax for the care of the insane has been successful, and that a peremptory mandamus has been issued requiring the Comptroller to pay \$714,000, the amount of accumulated taxes. The city has repeatedly fought against paying this tax, on the ground that, as the State Care for the Insane Act permitted it to retain charge of its own insane, it was unconstitutional that it should be required to pay its pro rata share of the cost of maintaining the State insane.

Miscellanp.

THE INDEX MEDICUS NEEDS SUPPORT.

THE Index Medicus, it is stated, will cease to be published with the February number, owing to lack of support and the fact that a large number of its subscribers are delinquent, unless an effort is made to continue it. Each year has shown a deficit.

The value of this publication to those who do any work at all in connection with medical literature is very great, and it is particularly necessary that the *Index Medicus* should be continued now, owing to the fact that after the completion of the supplementary volume of "The Index Catalogue of the Surgeon General's Library" there will be no record of contemporary medical literature, and he who desires to keep pace with it, or who wishes to study a particular subject will have to resort to the laborious task of seeking in various journals that which he desires if the publication of the *Index Medicus* ceases.

It will be possible to continue the *Index Medicus* if five hundred new subscribers are obtained. The subscription price is ten dollars per annum, which should be sent to Mr. George S. Davis, publisher of the *Index Medicus*, Box 470, Detroit, Mich.

THE ANTITOXIN TREATMENT AT STUTT-GART.

SIGEL, of Stuttgart, gives an account of the treatment of twelve cases of diphtheria in children by antitoxin at the Olga Hospital. Seven of the cases were severe, and three in a condition which would heretofore have been considered incapable of cure. Nine of the twelve cases required tracheotomy; and from these cases Sigel concludes that the course of the disease after tracheotomy is much more favorable with the antitoxin treatment. One child sat up in bed playing on the day after tracheotomy had been performed.

The results noted after the antitoxin injections were (1) rapid improvement in the general condition, (2) a more rapid detachment of the membrane, (3) the possibility of an early removal of the tube (in one child on the third day). No influence on the temperature was observed.

It is interesting to know that all twelve children had albuminuria, but that in six of them this did not appear till after the antitoxin injections. Although on the seventeenth day after the treatment was begun all the children were doing well, Sigel is unwilling to pronounce an opinion on the value of the treatment, as he considers the present epidemic to be of a mild character.

! Deutsche Med. Wooh., November 29, 1894.

Correspondence.

REMINISCENCES OF THE HARVARD MEDICAL SCHOOL IN THE YEAR 1846.

Boston, December 3, 1894.

MR. EDITOR: — In my letter of October 18th, referring to the Harvard Medical School in 1846, I intended to allude to each professor, giving only first impressions made by them on the student; but finding that the letter would be too long, mention of some were omitted.

Your correspondent "C" (October 30th) refers to Dr.

Your correspondent "C" (October 30th) refers to Dr. Channing's female pelvis and rag baby. I remember, too, with what facility and rapidity it would be "born again"; how the baby would "wind about and in and out" five times in as many minutes; but, bless your heart, Dr. C., didn't you have a manikin? I suppose not, as your pupilage was three whole years before mine. Ours was faithfully used, but I was surprised that we learned so little from it; all I could see was the "final dive."

Anesthetics had just begun their career, and the question arose whether they could or should be used to relieve the pains of parturition. Many objections were brought up against their use; but the most perplexing one was, that the act would be sacrilegious and an attempt to set at naught a decree of the Almighty, who had declared to Eve that "in sorrow should she bring forth children." The pros and cons were earnestly and conscientiously discussed, and the conclusion was on the whole that the use of ether was permissible. The outcome of this discussion was a gilt-top, two-dollar-and-a-half book by Dr. Channing.

Dr. H. J. Bigelow began his career as instructor in the Tremont-Street Medical School. He was rather tall, very slim, erect, of graceful figure, and wore a drab-colored coat. His lectures were highly practical and free from romance. He had the air of one who had a firm footing and (like the street-cars) "the right of way." As an operator he was somewhat ostentatious. He would take his knife as you would hold a pen, raise it to a level with his forehead, then bring it down to the selected spot. The same manœuvre (similar to that of an expert pianist) would be gone through with when he changed his instrument.

Dr. D. H. Storer was one of the most genial, cheerful and unselfish men that I ever knew—aiways glad to do a favor. He was teacher of obstetrics in the Tremont-Street School at this time, and went over to the Harvard School when that school absorbed the former. The Tremont-Street School was much the better of the two.

To change the subject; the two most important epochs in medicine in the last half century were the establishment of anesthesia and Listerism; and any minor details of their early history now have more or less interest. In the summer of 1872 it was my privilege to witness the practice of Mr. Lister at the Edinburgh Infirmary. He is a tall, stout but well-proportioned man, with a physique and countenance indicative of great physical and mental vigor. He had full confidence in the importance and final success of his discovery, but this confidence seemed to be shared by no one else. None of the other surgeons used his treatment. Mr. Spence and the rest tabooed it wholly, and were then using the cotton-batting dressing. The trustees of the Infirmary were opposed to it, and contemplated its abolition on the ground that patients were kept too long in the house for the sake of experiment. Lister treated all wounds antiseptically, with only partial success. He had a case of caries of the spine that had been under treatment six months with poor success. A case of lacerated wound of the knee-joint was brought in and treated antiseptically. The patient died in three days of septicemia. But such cases did not dampen the ardor of Lister. He did not claim that perfection had been attained. He said that carbolic acid was the best antiseptic known then; but it was an irritant, and objectionable on that account, and probably would be displaced in the future for something better. Boracic acid was better for surface wounds, but not being volatile could not penetrate deeply. The greatest honor that can be conferred upon a Scotch surgeon is

an appointment in one of the great London hospitals and this came in due time to Lister. He was invited to St.

George's, where he still is.

After leaving Edinburgh I visited the London and Paris hospitals, but not a whiff of carbolic acid did I smell.

They were using the cotton-batting dressing with very good success.

Yours respectfully,

ISAAC F. GALLOUPE, M.D.

AN OLD-TIME BOOK OF AN OLD-TIME DOCTOR.

ROXBURY, December 1, 1894.

MR. EDITOR: — Through the kindness of a patient who has lately come into possession of some family documents I have before me a curious old book, covered with parchment and tied with leather thongs. It contains about two hundred pages, which are pretty closely written in different hands and at different periods—the same owners having shown a markedly thrifty disposition toward the using up of blank paper.

The first owner seems to have been a farmer; and the earlier pages, in a faint ink, bears date about 1720, and contain charges mostly for farm work and produce against various individuals. These entries have been in part written over, after the manner of the ancient palimpsests, by

subsequent owners.

The next series of entries was apparently by Joseph Wales, about 1750 to 1758, and refer to horse-shoeing and other work.

A strong and very legible chirography is that of "Wm. Holden, one of His Majesty's Justices of the Peace for the County of Suffolk," who writing from the opposite end of the book, fills a number of pages with records of the cases tried before him in the decade before the Revolution. Besides these reports of law-suits, I find minutes of sundry civil marriages performed by this magistrate. A not infrequent species of entry is the following, from which I suppress the names:

Suffolk, ss. Dorchester, July 28, 1768. Then personally appeared Susannah ——, of said Dorchester, Spinster. Being first Strictly charged to declare the Truth, she, the said Susannah, solemnly swore that she was then with child (or pregnant) by one ——, of Newtown, and that the child she was then pregnant with was begotten on the sixth day (at Night) of November, one thousand seven hundred and sixty-seven, by the afores'd ——, and that he and no other person was the father of the same, etc.

Another such child was sworn to have been begotten on June 3, 1771, "being the day of Artillery Election at Boston." In many of these cases the statement employed by the affirmant was that "when the child should be born it was likely to be born a Bastard," which, while no doubt a regular legal formula, strikes one as a delightfully circumspect and guarded statement of the probabilities.

The final writer in this book was Dr. Phineas Holden, of Dorchester (probably a descendant of the magistrate), who used it for his professional accounts, between the years 1799 and 1808, and mixed freely with these all sorts of other memoranda. Dr. Holden's contributions to the volume are

my excuse for the present communication.

The chief use to which the doctor put this book was as a ledger. Successive pages have at the top the names of more or less prominent citizens of old Dorchester. The commonest entry is under a given date "To one visit," and the member of the family on whom the visit was made is always carefully specified. The amount charged, however, is rarely set down. Once, for medicine, the charge of 1s. 6d. appears. Rarely, at the bottom of the page, is the entry "Paid in full" (the amount not specified), oftener we read "Not paid"; and oftenest of all there is no record as to payment, which may mean either that the doctor was a poor collector or a poor book-keeper.

Observe attendance is generally expressed by the formula, "To laying his wife"; more rarely by "To putting his wife to bed." The next commonest service seems to have been pulling teeth. In one family the entry "To pul-

ling a tooth for Hannah," and "To pulling a nother tooth for Hannah" appears so often that one counts to see if that one young woman could have furnished the wherewithal for so many extractions. But it is all right.

Among other items showing the nature of his practice I transcribe a few:

ing with very manseribe a lev

To one visit to His negro.
To one visit to william kickt by a horse.
All night to laying his wife.
To all night with his wife.
Colick to 2 visits Oct 21.
To seting Mr. Bird's Arm.
To attending his Son with a Sore on his face.
To dressing his sore finger.
To cutting his child's tung.
To 1 visit to him with his knee.
To 1 visit to his girl with a nut in her throat.
A Lady at ben Jacobs, to 1 visit to her negro woman.
To one visit to Charlot in fits.

In the somewhat long list of the children born by his minister's wife appears the entry,

1807. She made a misgo this February.

The only therapeutic note I find is the following:

Cure for fellons. Wormwood steeped in Rum put in powdered Rozen then pull it as Wax then spread it on Leather and put it on, they Say it is Certain.

A side light on the life of a country doctor of that day is afforded by charges mixed in with those for professional attendance—for "half bushel Carrots," "To quarts cyder he has had" (with a tally-score following), "To gitting his salt hay," etc.

Interspersed with these professional and extra-professional charges are memoranda more or less trivial, as to the date when the cherry-trees "were blone," when was the first snow and the latest, when he killed his pigs, when he made "sope," and how much ashes he used therefor, when "the Tin wair men came," etc. Again, we have glimpses of mild festivity. Of a wedding in 1803 he says:

He and his Lady Rode to Church in a coch, thair was mats Laid from the coach into the Church then flanel for them to walk on.

on. 1802. The Doct and his wife went to see the Sain Drawn June 14.

A similar outing occurred in 1806 — "To see the Sain put out & drawn in."

Probably the doctor was a militia surgeon. At all events he went to the trainings:

1800. The Bregade turned out at Dorchester Sep. 25.
1801. Grate training at Brantry (Braintree) Sep. 17.
1802. The Bregade turned out at Jamaica plane Sep. 20.

Perhaps the doctor was at one time a valetudinarian, or was obliged to take his exercise indoors, otherwise what would be the point of the note, "160 times a cross our Long Entry is a mile."

The book contains some items of general historical value; for instance:

1799. A fier in Boston opeset the White Horse, May 11.
1800. Went to Mr. Ballard's for the first time. Governor
Gill Buried the Same Day.
1801. Doct Rans Son killed in a Duel June 14 on Dorchester

1801. Doct Rans Son killed in a Duel June 14 on Dorchester Neck and he heard of another Son's Death in half anour after in the Westinges.

I fear the good doctor was a little close with his servants (for his accounts with them are in the book and show an occasional debit for the pulling of a tooth and the like); but he was a pious man, and many is the hymn which finds its way into the pages of his book. I will not weary you with them, but will in closing transcribe one stanza which apparently appealed to the doctor as descriptive of the successive stages of human life. It is hardly equal to Shake-speare's Seven Ages, but here it is:

At ten a child, at twenty wild, At thirty Strong if Ever, At forty wise, at Fifty Rich, At sixty Good or Never.

Yours truly, CHAS. F. WITHINGTON, M.D.

METEOROLOGICAL RECORD.

For the week ending December 8th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: -

	Thermom-Relative eter, humidity.					ction ind.		city rind.	We'th'r.		in inches.			
Date.	Daily mean.	Daily mean.	Maximum.	Mintmum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 ▲. Ж.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Rainfall in in
8 2 M 8 T 4 W 5 T 6 F 7	29.95 30.14 30.06 30.12 30.17 30.18 30.14	31 32 30 34 8 36 34	34 37 38 43 46 41 38	28 27 22 25 29 30 31	77 76 76 64 53	95 66 72 73 72 66 94	74	N. W. S. W. N. W. W. W. N. W. S.	N.W. W. W. S.W. W. S.	8 15 9 9 14 9	6 8 6 9 11 7 5	0.000000	N.C.C.C.C.O.	.0
		-	-	-	-	-	-			<u> </u>		_		-

*O., cloudy: C., clear: F., fair: G., fog: H., hazy: S., amoky: R., rain: T., threat ning: N., anow. † Indicates trace of rainfall 65 Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, DECEMBER 8, 1894.

Oities.		4	đ	2	Per	contag	e of de	eaths f	rom
		Estimated population.	Reported deaths in each.	Deaths under five years.	Infectious diseases.	Acute lung discases.	Typhoid fever.	Diphtheria	Scarlet fever.
New York .	•	1,956,000	660	226	12.90	17.85	1.20	6.00	.90
Chicago	•	1,600,000	-		-	! -	-		_
Philadelphia	•	1.189.457	398	127	18.00	-	1.50	12.00	.50
Brooklyn .	•	1,013,000	358	121	17.64	17.08	.56	13.16	1,40
St. Louis	٠	540,800		-		=		 .	
Boston	•	501,107	244	86	25.01	12.80	2.05	17.68	1.64
Baltimore .	•	500,000	89	21			.=		
Washington	٠	2~5,000			17.22	17.22	4.92	4.92	1.23
Cincinnati .	•	325,000	137	40 39	10.96	8.03	2.92	4.38	
Cleveland .	•	825,000	100	45	18.00	12.00	2.00	1.00	12.00
Pittsburg .	•	272,000	91	70	19.57	21.68	1.08	8.24	2.06
Milwaukee .	•	265,040	34	3	5.88	30 50	_		2.94
Nashville .	•	87,754	30	12		20.58	_	2.94	3.92
Charleston .	•	65,105	30	14	8.38	3.33	=	-	-
Portland	•	40,000	13	4	7.69	24.07	_	_	_
Worcester . Fall River .	•	100,410 92,233	33	10	18.18	21.21	0.00	_	_
Lowell	•	90,613	32	16	9.39	28.17	9.09	6.26	_
Cambridge .	•	79,607	14	4	21,42	21.42		14.28	=
Lynn	•	65,128						14.20	
Springfield .	•	50,284	8	0	_	! =	_	_	_
Lawrence .	•	49,900	17	7	5.18	23.52		=	5.88
New Bedford	•	47,711	20	7	20.00	5.00	_	10.00	0.00
Holyoke	•	43,848	īĭ	ò	-0.00	9.09	_	10.00	_
Brockton .	•	33,989	8	8	_	0.00	_	_	
Salem	:	83,155	. ğ	6	-	11.11	_	1 =	=
Haverhill .	•	32,925	5	Ō	_	_	_	_	_
Malden	:	30,209	6	2	50.00	_	16.66	16.66	_
Chelsea	:	29,106	ĕ	4	16.66	_		16.66	_
Fitchburg .	:	29,3⊦3	7	4	-	14.28	_	-0.00	_
Newton	:	28,137	. 7	4	57.12	_	_	57.12	_
Gloucester .	:	27,293	-	-	_	-	_		_
Taunton	•	26,964	18	5	22.22	i –	_	16.66	-
Waltham .	:	22,058	3	0	-	i —	_	_	_
Quincy	:	19,642	10	3	80.00	10.00		30.00	-
Pittsfield .		18,802	-	-	_	_	_	_	_
Everett		16,5×5	4	2	50.00	50.00	_	25.00	_
Northampton		16,331	4	0	_	-	_	_	_
Newburyport		14,073	7	0	-	14.28	_	=	I _
Amesbury .	•	10,920	3	0		33,33			

Deaths reported 2,476: under five years of age 818; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 384, acute lung diseases 320, consumption 315, diphtheria and croup 218, scarlet fever 39, typhoid fever 35, diarrheal diseases 32, whooping-cough 20, measles 12, erysipelas 10, malarial fever 10, cerebro-spinal meningitis 6, small-pox 2.

From diarrheal diseases New York 8, Philadelphia and Pitts-hurch 4 seeb. Clevelend 3, Reston Cinclepati and Pitts-

From diarrheal diseases New York 8, Philadelphia and Pittsburgh 4 each, Cleveland 3, Boston, Cincinnati, Fall River and New Bedford 2 each, Brooklyn, Washington, Charleston, Cambridge and Malden 1 each. From whooping-cough New York and Brooklyn 5 each, Boston 4, Washington, Worcester, Fall River, Lowell, Taunton and Pittsbled 1 each. From measles New York 8, Philadelphia and Pittsburgh 1 each. From erysipelas Cincinnati, Cleveland and Pittsburgh 2 each, New York, Philadelphia and Brooklyn 1 each. From malarial fever New Print. 1894.

A New Apparatus for Administering Auesthetics in Face and Mouth Operations. By Edmond Souchon, M.D. Reprint. 1894.

York 5, Brooklyn and Washington 2 each, Philadelphia 1. From cerebro-spinal meningitis New York 3. Boston, Washington and Cincinnati 1 each. From small-pox New York 2. In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending December 1st, the death-rate was 17.8 Deaths reported 3,570; acute diseases of the re-piratory organs (London) 263, measles 132, diphtheria 89, whooping-cough 57, diarrhea 55, fever 53, scarlet fever 42, small-pox (Birmingham 3) 3.

The death-rate ranged from 13.8 in Huddersfield to 25.1 in Swanses; Birmingham 17.2, Bradford 16.8, Cardiff 17.2, Croydon 14.4, Leeds 21.6, Leicester 18.2, Liverpool 20.8, London 16.1, Manchester 17.2, Newcastle-on-Tyne 19.4, Nottingham 14.2, Portsmouth 21.0, Salford 20.5, Sheffield 17.9, Sunderland 22.6.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT. U. S. ARMY, FROM DECEMBER 8, 1894, TO DECEMBER 14, 1894.

The leave of absence granted Captain Eugene L. Swift, assistant surgeon, is further extended two months.

FIRST-LIEUT. CHARLES E. B. FLAGG, assistant surgeon, now on duty at Angel Island, California, will report in person at Fort Townsend, Washington, for temporary duty at that post.

CAPTAIN EUCLID B. FRICK, assistant surgeon, is granted leave of absence for four months.

FIRST-LIEUT. MADISON M. BREWER, assistant surgeon, upon the expiration of his present leave of absence will be relieved from duty at Fort Riley, Kansas, and will report for duty at Fort Keogh, Montana.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING DE-CEMBER 15, 1894.

 $\mathbf{M},\mathbf{R}.$ Pigott, passed assistant surgeon, from Chelsea Hospital and to Mare Island Hospital.

S. G. Evans, passed assistant surgeon, from Mare Island Hospital and to the U. S. S. "Pinta."

HARVARD MEDICAL SCHOOL.

EVENING LECTURES.

The next lecture will be given on Thursday evening, December 27th, at 8 o'clock, by Dr. J. H. McCollom. Subject, "Diseases Dangerous to the Public Health." Physicians are cordially invited.

RECENT DEATHS.

GEORGE JEWETT, M.D., M.M.S.S., of Fitchburg, died in that city December 16th, age sixty-nine years. During the war he was surgeon in the Union Army under Generals McClellan and Meade. He was at one time president of the Worcester North Medical Society, and vice-president of the Massachusetts Medical Society. He was a trustee of the Fitchburg Public Library and of the Burbank Hospital, and also a member of the consulting steff of that heapital ing staff of that hospital.

CHARLES PINCENEY GAGE, M.D., of Concord, N. H., died in that city on November 26th, aged eighty-three. He was a graduate of the Dartmouth Medical School and of the Cincinnati Medical College, and practised for a time in Cincinnati, but soon returned to Concord, where he practised for many years. He was one of the original members of the American Medical Association and had been president of the New Hampshire Medical Society.

BOOKS AND PAMPHLETS RECEIVED.

Bladder Gymnastics and Auto-Irrigation. By Byron H. Daggett, M.D., Buffalo, N. Y. Reprint. 1894.

The Hygienic and Dietetic Management of Phthisis. By L. P. Barbour, M.D., Thomasville, Ga. Reprint. 1894.

Retinoscopy as a Crucial Test in Measuring Errors of Refraction. By B. Alex. Randall, M.A., M.D. Reprint. 1894.

Lumbar Puncture for the Removal of Cerebro-Spinal Fluid. By William Browning, M.D., Brooklyn, N. Y. Reprint. 1894. A New Apparatus for Administering Auesthetics in Face and Mouth Operations. By Edmond Souchon, M.D. Reprint. 1894.

Original Articles.

A CASE OF MENTAL SHOCK.1

BY GEORGE F. JELLY, M.D.

In January, 1891, I was asked to see in consultation Mr. G. W. H., aged thirty, married, who had been employed for several years by the Old Colony Railroad as superintendent of trains, his duty being to make up trains and send them to the depot. He was born in Massachusetts, of healthy parents without any marked heredity to disease, was a man of good habits and character, had never used liquor or tobacco, and had never had venereal disease. He was nervous and excitable in temperament, but had always been in good health.

A few days before I saw him, while walking across the railroad track, he caught his foot in an electric wire which was being laid for the use of the road, and fell directly across the track, striking upon his hands. He knew that an express train was approaching, realized that there was not time to rise and move away, but managed to throw or roll himself from the roadbed to the side of the track, and lav there while the train passed with great rapidity, within a few inches of his head and body. He was entirely uninjured, so far as could be seen, except that he had a slight wound upon one hand, which he received in falling, having put out his hands to break his fall, and which was of no consequence. rose after the cars had passed, somewhat shaken up, but apparently not very much disturbed, and went He told his wife of his fall and narrow escape, seemed nervous and restless, and had little appetite for food. He slept but little in the early part of that night, and before morning seemed startled and frightened, and it was found that he could not speak. This state of things continued till the time I saw him. I found him in bed, looking tired and worn, with marked tremor of lips, tongue and hands; and on having him taken out of bed, he was very unsteady on his legs, which were also very tremulous, and he was unable to walk without assistance. A careful examination revealed no trouble with his heart, lungs, liver, stomach or intestines, and a subsequent examination of the urine showed no disease of the kidneys. reflexes were normal, and there was no paralysis of sensation or motion, and no hyperesthesia so far as could be ascertained. His pupils were of equal size, and contracted and expanded properly. There was no ophthalmoscopic examination. Any noise disturbed him very much; and the sound of railway trains, which passed frequently near his house, excited him and made him tremble as if afraid. He could not talk, and while apparently understanding what was said to him, answered only by signs. Some of his signs were original, but had already become familiar to his wife - for instance, passing the palm of one hand over the palm of the other, meant a slice of bread spread with butter; the closed hand raised to the mouth, and that organ being opened as if to bite something round, meant that he wanted an apple. His temperature was normal, his pulse rapid and tense. He had taken food fairly, but had slept only under the influence of bromide. The presence of many people disturbed and confused him; and a strange

 $^{\rm 1}$ Read before the Boston Society for Medical Observation, November 5, 1894.

face like mine threw him at first into a violent tremor, which became less when he became accustomed to my presence. He could point out familiar objects in the room, like the family pictures, when asked to do so, and their names were mentioned to him. He did not seem to lack intelligence when quiet and not frightened, but simply the ability to talk.

I saw him a few days after my first visit, and found him much the same except that he was more quiet and less disturbed by persons and things about him and by noise. When I next saw him, after three weeks, he could talk some, but very slowly, and he stammered badly. His mind acted very sluggishly, and he would be two or three minutes in replying to a question requiring a very few words. If hurried he became utterly confused. I did not visit him again for several weeks, but heard from him through his He gained gradually in strength family physician. and in ability to talk, and his gait became more steady. At one time, for a week, he was excited and irritable; but that condition soon passed, and he was generally pleasant, easily directed, and easily cared for.

During this period, which covered several weeks from the time of the accident, he apparently under-Noises of the city, stood all that was said to him. and especially those of the cars and locomotives, disturbed him so much that in the summer of 1891 he was taken to a farm in New Hampshire, where he remained several months. He made the journey by carriage, and was not especially troubled by it. improved slowly during the summer, and in the autumn, instead of returning to Boston, he went to his father's in a very quiet part of Middlesex Fells. I then saw him more frequently, as he passed directly under my care. I found that he had made decided progress, that he was less easily made nervous, that he talked better (but still very slowly), and that there was a good deal of tremor of the lips, tongue, hands He was able to take a good amount of exercise and to assist his father about the house and garden. He still found himself unable to go near the cars without increasing the trembling and creating a strong impulse to run away, which it was difficult to resist. He could, however, recollect almost nothing of the daily occurrence of his life without assistance from his wife.

During the autumn of 1891 and the winter of 1892 there was the same gradual gain, which became more decided and more marked in the spring.

In June, 1892, there was a rather rapid clearing up. To my surprise I then found that he had no recollection of anything which had occurred from the time of his accident in January, 1891, a period of seventeen months, and that while he had apparently understood what was said, and had seemed to know what he was doing, none of these things had made any impression upon his mind, and his acts had been largely auto-As a marked instance of this, might be mentioned that, several months before, he had turned the full stream of a garden hose which he was using into the mouth of a man who swore at him in passing, saying that he would wash out his mouth. Of this transaction he remembered nothing. He did not recollect distinctly having seen me; and his changes of residence were equally indistinct. His memory of things now increased, one day at a time, till he could look back one week, then two, then three weeks, then a month, till now he can recollect many important things for six months, and with a little help can go back still further; but he still cannot recall many smaller matters.

In the summer of 1892 he brought a suit against the Old Colony Railroad, claiming that the wire which caused his fall should not have been where it was without protection. He was examined on the witness He trembled excessively all over, especially in his hands, legs and face. He became much confused; and a condition of nervous excitement was produced, and followed, which continued nearly a week, impaired his appetite, and prevented him from sleep-The lawyers of the railroad, ing for several nights. both in private and in court, admitted that he had been a faithful employé, that his injuries were real, and that he was entirely honest, and made a proposition to compromise and settle before the trial. They however, claimed that the road was not liable, and wished a ruling in the lower court on which they could go to the Supreme Court on that question. The judge of the Superior Court took the case, for that reason, from the jury before the conclusion of the testimony, and heard arguments on the question of liability. He took occasion, in the absence of the jury, to say that if the case went to them, then there was no doubt from the course of the trial, and especially from the condition of the plaintiff, that the verdict would be in his favor; and in that opinion the counsel of the railroad seemed to concur. After more than a year's waiting the Supreme Court gave an opinion that the railroad was not liable, on the ground that while the plaintiff as an employé of the road had a right to be where he was at the time, he had not used due care and caution.

Since this suit, which was brought two years ago, the patient has come to my office at intervals of two or three weeks, and I have had an opportunity to watch his progress, which has in general been continuous, but subject to variation arising from any unusual occurrence. The death of his father, which occurred somewhat suddenly after a short illness, upset him He was thrown from the back of a completely. horse, and did not recover from the shock for several weeks. He attended a family gathering at Thanks-giving, and in consequence, did not sleep well for three weeks.

While there has been the constant improvement which I have mentioned, it was not till the present summer that he could trust himself to riding in the steam-cars or the "electrics," as the approach of either still startled and frightened him, and brought on severe trembling. He persevered, and endeavored to overcome this by going to the railway station and by accustoming himself to In August last he was nauseated meet the electrics. and vomited after riding in an electric-car; but since the early part of September all this has passed, and he now comes to my office in the steam-cars and electrics without apprehension or special inconvenience of any kind.

I have never discovered any loss of sensation or any hyperesthesia. Sometimes there has been a slight exaggeration of the knee-jerk, but almost always it first have been the general tremor and the mental weakness which I have described. He has led and is is in excellent general health. He has of late gained physical injuries.

flesh, and now has rather more than his usual weight. He is naturally a slight man, but at one time was very thin. He has worked about the house and garden, and can do manual labor which is not severe. He helps a grocer who lives near him; but to attempt to do anything which requires any real responsibility, was for a long time followed by mental confusion and trembling. He has still to be very careful; but the more marked and decided recent gain has encouraged him to attempt to run a wagon for the sale of butter, cheese and eggs in his neighborhood, an occupation which will keep him much in the open air, and will require little outlay and not much responsibility. He is still not well, but there seems to be absolutely no evidence that he does not do all in his power to help himself. He certainly is very anxious to go to work, and he is so situated that it is very necessary that he should do so.

I gave at first an entirely favorable prognosis, and expressed the opinion that in a few months he would be well. I was always inclined to be hopeful about his future in the absence of more grave symptoms. But the long continuance of the tremor, which was very great under slight provocation, and of the other symptoms of physical and mental enfeeblement; the many months in which his acts seem to have been in a great measure automatic, and to have made no impression upon his memory, which is still impaired; and the fact that nearly four years have now elapsed since the accident, make me less confident than I was of his entire recovery. The history of the case, and the absence of symptoms of organic disease, indicate that the patient was and is still suffering from functional or hysterical disease of a neurasthenic type. He now trembles very little; an excessive irritability, which is unnatural to him, has almost disappeared; and while his mind is still weak and can act only slowly, and in rather narrow limits, he is far advanced in convalescence.

I have called this "a case of mental shock" because there was an entire absence of any physical injury which could have originated the symptoms from which the patient has suffered. It is a singular fact that several times during the years in which he had been in the service of the railroad he had been in positions of great danger from which he barely escaped with his life, and never before had suffered any serious injury or been especially disturbed.

The fright and shock in this instance seem to have acted upon him very much as they sometimes do in children in the production of chorea and epilepsy. While it is difficult to prove, it is probable that such cases depend on nutritive disturbances in the brain caused indirectly by the violent action of psychical emotions upon the vaso-motor centres, and directly by the anomalous action upon the vascular currents of the brain which proceed from those centres.

The treatment of the case has been very simple. He took bromide at first to quiet nervous excitement, and occasionally at intervals when he has been unable to sleep. He has taken strychnia, arsenic, and ol. morrhuæ; but the chief reliance has been upon a quiet has been normal, as it was at the time of my first ex-amination. The most marked symptoms from the good nourishing food. For a time the faradic current was used, but without apparent effect. I have not looked up fully the literature of similar cases, but they still leading a very quiet life, in a secluded place, and are less frequent than those following more marked

Under the head of "Traumatic Neuroses," Osler gives this definition: "A morbid condition following shock, which presents the symptoms of neurasthenia or hysteria, or of both. The condition follows an accident, often in a railway train, in which injury has been sustained, or succeeds a shock or concussion from which the patient may apparently not have suffered in his body. A man may appear perfectly well for several days, or even a week or more, and then develop symptoms of the neurosis. Bodily shock or concussion is not necessary. The affection may follow a profound mental impression; thus an engine-driver ran over a child, and received thereby a very severe shock, subsequent to which the most pronounced symptoms of neurasthenia developed. Severe mental strain combined with bodily exposure may cause it [as in the case of a naval officer who was wrecked in a violent storm, and exposed for more than a day in the rigging before he was rescued]. A slight blow, a fall from a carriage or on the stairs, may suffice."

Osler divides these cases into three groups: "Simple neurasthenia, cases with marked hysterical manifestations, and cases with severe symptoms indicating or

simulating organic disease.

"In simple traumatic neurasthenia the first symptoms usually develop a few weeks after the accident, which may or may not have been associated with an actual trauma. The patient complains of headache and tired feelings. He is sleepless, and finds himself unable to concentrate his attention properly upon his work. A condition of nervous irritability may develop, which may have a host of trivial manifestations, and the entire mental attitude of the person may for a time be changed. [He dwells continually upon his condition, gets very despondent and low-spirited, and in extreme cases, melancholia may develop.] The bodily functions may be well performed, though such patients usually have for a time, at least, disturbed digestion and loss in weight. The physical examination may be entirely negative.

"Second, cases with marked hysterical features. Following an injury of any sort, neurasthenic symptoms like those described above may develop, and, in addition, symptoms regarded as characteristic of hysteria. The emotional element is prominent, and there is but slight control over the feelings. A violent tremor may be present, and indeed constitutes the most striking feature of the case. [I have recently seen an engineer who developed subsequent to an accident a series of nervous phenomena, but the most marked feature was an excessive tremor of the entire body, which was specially manifest during emotional excitement. The most pronounced hysterical symptoms are the sensory disturbances. [It will be recollected that in my case they were uniformly absent.] As noted by Drs. Putnam and Walton, hemi-anesthesia may occur as a sequence of traumatism.

"Third, cases in which the symptoms suggest organic disease of the brain and cord. As a result of spinal concussion without fracture or external injury, there may subsequently develop symptoms suggestive of organic disease. The cases in this group, about which there is so much discussion, are those which display marked sensory and motor changes. In rare cases following trauma and succeeding to symptoms which may have been regarded as neurasthenic or hysterical, there are organic changes which may be fatal. That himself afterwards. The view is now commonly held

post-mortem examinations. The features upon which the greatest reliance can be placed in indicating definite organic change are optic atrophy, bladder symptoms, particularly in combination with tremor, paresis, and exaggerated reflexes.

"The anatomical changes in this condition have not been very definite. When death follows spinal concussion, there may be no apparent lesion; but in some instances the brain or cord has shown punctiform hemorrhages. Edes has reported four cases in which a gradual degeneration in the pyramidal tracts followed concussion or injury of the spine; but in all these cases, there was marked tremor, and the spinal symptoms developed early, or followed immediately upon the accident. Post-mortems upon cases in which organic lesions have supervened upon a traumatic neurosis are extremely rare."

Page defines shock as, "The sudden depression of organic, vital and nervous power produced by injury, either to mind or body. It has long been recognized that fright may be a cause of serious disturbance of health; and the phenomena of shock, produced by it, like as they are in all respects to those which ensue upon severe physical injury, give evidence of a grave

effect upon the nervous system.

"The siege of Strasbourg and the siege of Paris during the last Franco-German War, were both productive of many examples of grave nervous disturbance which clearly had their origin in the terrible circumstances to which the sufferers had been exposed, to wit, the constant bursting of shells, the ever-present sense of danger. To a railroad accident there is the added element of fright; and collapse from fright is met with in various degrees of severity; and we may leave out of the account cases in which there has been some physical injury inevitably associated with and giving rise to shock. There may be immediate collapse, or collapse the symptoms of which may be delayed by the excitement of the scene, warded off but not prevented, rather increased, by the delay; for the excitement is in itself a cause of nervous prostration. It is not uncommon for a man who has merely felt a little dazed and sick at the time of the accident to break down completely after he reaches home, and then to present the symptoms of ordinary collapse. From this period may date the beginning of more obvious mental and cerebral disturbance. Extreme bodily weakness is the result; and this general condition of feebleness and prostration, to which nowadays the term neurasthenia is often applied cannot act otherwise than injuriously upon the parts of the sensorium which have to do with moral control; and both the hysterical attacks and the accompanying despondency are prone to be increased thereby. A vicious circle has obviously been established, and it is no ground for surprise that as an occasional outcome of these combined conditions, the despondency should deepen into real melancholia.

"In a state which seems in itself to indicate complete annihilation of the higher faculties of the sensorium, a man may nevertheless be able to perform acts which are apparently under perfect cerebral volition and control. He may take himself home, and have no subsequent recollection of how he got there; or may give an erroneous account, both of what happened to himself, at the time of the accident, and how he conducted this sequence occurs is demonstrated clearly by recent that the dazed condition which has been described is

very closely allied to, if not identical with, the pur-

posive experimental hypnosis." The diagnosis in these cases may be difficult. To quote again from Osler: "A condition of fright and excitement following an accident may persist for days or even weeks, and then gradually pass away. The symptoms of neurasthenia or hysteria which subsequently develop present nothing peculiar, and are identical with those which occur under other circumstances. It may require a careful study of the case to determine whether the individual is honestly suffering from the symptoms of which he complains." A still more important question is, Has the patient organic disease? The symptoms given under the first two groups of cases (those with simple neurasthenia and those with marked hysterical symptoms), may exist in a marked degree, and may persist for several years without the slightest evidence of organic disease.

"In regard to prognosis, it may be said that a majority of patients with traumatic hysteria recover. Patients have recovered after the persistence of the most aggravated symptoms, with complete disability of several years' duration. In extremely rare cases organic diseases may develop."

While we call these cases hysterical or functional for want of better terms, they are often very serious in the impairment which they cause, and very intractable when there is no suspicion whatever of malingering or intentional exaggeration.

ON THE OCCURRENCE OF LEAD IN CITY DRINKING-WATERS.1

BY WILLIAM B. HILLS, M.D., Associate Professor of Chemistry, Harvard Medical School.

In October, 1889, Dr. E. M. Greene read a paper before the Boston Society for Medical Observation, in which he presented the results of an investigation occurrence of lead in Boston drinking-water. Sixteen examinations were made of water taken from different parts of the city and coming from Lake Cochituate. The service pipes were in all cases of lead. Fourteen of the specimens examined contained lead. In three of the fourteen cases the water had stood in the pipes for various intervals, namely, fifteen minutes, thirty minutes, and two days; in the latter case, practically for several weeks. The remaining eleven specimens were taken after the water had been allowed to run from two to thirty minutes.2

Dr. Greene was not, however, the first to investigate this subject. The presence of lead in the water supplied to Boston through lead pipes had already been pointed out, several years before, by the late Prof. Wm. Ripley Nichols, who states that such water always contains traces of lead in solution. The amount of lead taken up by the water of Lake Cochituate in passing through some 150 feet of pipe, which had been in use for some years, was found to be only 0.03 part in 100,000, or less than 0.02 grain in the U.S. gallon. Water which is allowed to remain in the pipe for some time, or is drawn from the hot water faucets, may, however, contain as much as 0.1 or even 0.2 part in 100,000, or 0.06 to 0.12 grain in the gallon.

As a result of his investigations, Professor Nichols

came to the conclusion that the use of lead pipes for house distribution in connection with a public supply, is, as a rule, unattended with danger. The pipes soon is, as a rule, unattended with danger. become covered with a coating of lead compounds which is practically insoluble. After the formation of this coating, the action on the lead practically ceases, provided the pipes are kept constantly filled so as to prevent exposure to the alternate action of air and water. He expressed the opinion, however, that it probably never ceases absolutely.8

While, therefore, Dr. Greene's results were not new from a qualitative point of view, quantitatively they were important, in that they directed attention to dangers the existence of which had hitherto appeared improbable. One of the specimens examined by him, taken after running two minutes, contained nearly one grain of lead to the gallon; a second specimen, drawn after running five minutes, contained nearly one-half a grain to the gallon. These figures are far above those obtained by Nichols, and exceed any which have been suggested as an outside limit of safety. In point of fact, Dr. Greene's investigations were suggested by the occurrence of several cases of lead poisoning in the families occupying the houses from which these samples

It is not stated whether the specimens examined were filtered or unfiltered. It is hardly conceivable, however, that water taken under the conditions given by Dr. Greene could have contained such an amount of lead in solution. Presumably the lead was present, in large part, in the form of insoluble compounds held in suspension. One obvious source of such compounds is the insoluble coating which may be presumed to exist on the interior of the lead pipe. There is, however, one other possible source which was brought to my notice in the course of an investigation of this subject which was undertaken in 1890, and carried on in a desultory manner till about a year ago. During this period I examined nine specimens of city waters for which had recently been made by him relative to the flead — three taken from a house in Boston, six from my own house in Cambridge. Two of the Cambridge samples had stood in the pipe over night; the remaining four samples were taken after the water had been allowed to run from two to five minutes. The Boston samples came from a house on Commonwealth Avenue. The occupant, a physician, died soon after the analyses were made, and before I had an opportunity to inquire concerning the conditions under which the samples were taken. Lead was present in all the samples examined. The water examined was in all cases unfiltered; the analyses were qualitative. While the number of analyses is small, the results, so far as they go, confirm those previously obtained by others, and in connection with the latter justify the statement that lead in minute quantity is a common constituent of the drinking-water as supplied in cities.

It has been my intention to make quantitative estimations in filtered and unfiltered specimens of water; but this work has been prevented thus far by other duties. In the meanwhile my attention has been directed to the occurrence, at times, in water drawn through a galvanized-iron pipe in my laboratory at the Medical School, of solid particles which were found upon analysis to be red lead. A single analysis of filtered water drawn through the same pipe showed the presence of a trace of lead in solution. Upon inquiry I have

Read before the Cambridge Society for Medical Improvement.
 Boston Med. and Surg. Jour., exxi, page 533.

³ Report of the Massachusetts State Board of Health, 1871, page 32, and Water-Supply, pages 212-214.

learned the following facts, the presentation of which is the main object of this paper:

Red lead is used very generally by plumbers, steamfitters, and gas-fitters in coupling iron and brass pipes. In the process of coupling, the lead is usually applied to the thread upon the inside of the couple. When the pipe is fitted to the couple, the surplus lead, comprising in fact the greater part of that applied to the thread, is forced forward and into the pipe through which the water, steam or gas flows. Wherever there is a couple, therefore, the water is usually in direct contact with the red lead, as the exhibits show. I have seen pipes which were almost closed by an overhanging curtain of red lead; and I know of one instance in which the flow of gas was prevented by a similar curtain.

The number of couples in a house that is fitted with galvanized iron or brass pipes for the conduction of water depends upon the length of the pipe, the number of faucets, and the number of bends in the pipe. Galvanized iron and brass pipes cannot be bent as lead pipes are; changes in direction are therefore effected by the use of couples technically called "L's" and "T's." It is not customary to employ iron or brass pipes throughout the house. Brass pipes are used, however, for the conduction of hot water; and there is a practice in vogue in some cities of using galvanizediron pipes in part in the place of lead pipe for the conduction of cold water. In such cases the water is conducted from the street into the cellar of the house through galvanized-iron pipes and the lead pipe is connected in the cellar. The water drawn on the first floor of the house flows, therefore, through but a few feet of lead pipe. . This practice has been followed to some extent certainly in this city.

Probably the facts I have presented afford a partial explanation of the presence in city waters of such large quantities of lead as were detected by Dr. Greene. For red lead, although a so-called insoluble compound, is probably not absolutely insoluble. Moreover, it frequently contains more or less lead monoxide, which is more soluble than the red lead. The friability of red lead furnishes an additional opportunity for contamination with minute particles worn off by the water as it passes through the pipe. It is in fact preferred to white lead by plumbers on account of its friability; for white lead sets to a comparatively firm mass which offers considerable opposition to the separation of the pipes when repairs are necessary. For this reason white lead, if properly applied, is perhaps preferable to red lead from a sanitary point of view. Asphalt is preferable to either.

The possibility of lead-poisoning as a result of coupling pipes with red lead and white lead was long ago pointed out. I am not aware that the method of applying the lead compounds has received any attention. I have therefore ventured to call attention to it, since the particular method of application which is in vogue must certainly increase the opportunities for the contamination of our water-supplies, and for the absorption of lead into the system. It is possible that our city waters are more frequent sources of chronic lead-poisoning than we have suspected.

Much of the danger attendant upon the use of lead compounds for coupling pipes may be avoided by applying the lead compound to the thread on the outside of the pipe instead of to the thread of the couple. Then, when the coupling is effected, the sur-

plus lead compound is forced backward on to the outside of the pipe instead of forward into the interior. The process may with a little care be so conducted that little or no lead is exposed to the action of the water. I am informed, however, by an engineer to whom I am indebted for the facts herein presented relative to the coupling of pipes, that, so far as his observations extend, probably ninety per cent. of all plumbers, steamfitters and gas-fitters apply the lead compound in the manner first described, that is, to the thread of the couple.

DISCUSSION.

Dr. Driver had occasion to examine a lead pipe, used to conduct drinking-water from a well, which opened into the well over a large stone. Near the opening the pipe was bent at a sharp angle, and inspection showed the pipe at this point was worn as thin as paper by the continued friction and impact of the water and substances held in suspension. He thought it would be well to inspect all curves in lead water-pipe for the purpose of determining what is the general effect of the water current in wearing down the pipe, and how far this may be a source of lead in the water-supply.

Dr. A. P. CLARKE asked if galvanized-iron pipe was objectionable for conducting water supplies.

Dr. HILLS said the only objection was that of its rusting. As long as the zinc coating remains intact this will not occur; but as soon as the water gains access to the iron then rusting goes on rapidly.

cess to the iron then rusting goes on rapidly.

DR. H. MARION asked if it would not be advisable to notify the plumbers' association of the facts brought

out by the paper of the evening.

Dr. Hills said that when the engineer of the Harvard Medical School informed some plumbers who were busy doing a job of iron piping of the dangers involved in the method they were employing for fitting the joints, he was cursed and told to mind his own business.

Dr. MARCY asked about the process of japanning and its application to water-pipe, and the value of block-tin pipe.

Dr. Hills thought the base material used in japanning was asphalt. Block tin is used somewhat for waterpipes, and it is the best material; but there is danger of getting a lead pipe lined with tin, in which case, if the coating is imperfect, the lead is easily acted on by the water. A similar combination was found in Dr. Bowditch's house where the pipe, supposed to be tin, was found on analysis, to be an alloy of tin and lead. Lead and tin may be united in all proportions.

A FEW CASES ILLUSTRATIVE OF THE DIAG-NOSTIC VALUE OF AN EXAMINATION OF THE BLOOD.¹

BY HENRY JACKSON, M.D.,
Physician to Out-Patients, Boston City Hospital.

I WISH to report here to-night a few cases which demonstrate typically several important points which may be brought out by a careful examination of the blood.

Careful work of investigators throughout the world has shown the association of the ameboid plasmodia

¹ Read before the Boston Society for Medical Observation, November 5, 1894.

discovered by Larnan with malarial fever. That these organisms are the cause of the disease is rendered extremely probable as:

(1) Careful and competent observers declare they are always present in malaria.

(2) They are found in the blood just before a chill and increase in number up to the acme of the chill.

(3) They disappear with the subsidence of the chill.

(4) They disappear from the blood in the course of a few days after the administration of quinine in doses sufficient to stop the chills.

(5) They are not found in the blood of cases not malarial.

The first cases to which I wish to draw your attention are malaria, two perfectly typical cases of the tertian type in which the examination of the blood served only to make the physical examination complete in every detail, though the diagnosis was perfectly clear without this method of examination. The other two malarial cases which I have to present are atypical, of a form rarely seen here, cases in which the examination of the blood rendered certain the diagnosis of malaria which otherwise would at best have been only problematical.

CASE I. A man seen at the Boston Dispensary in November, 1892. His family history and previous history negative. Two months before he was seen he went to work at Saugus. He had been well until the last week or ten days, during which time he had had chills followed by fever and sweating coming every second day. He came to the dispensary two hours after a chill. His skin was hot and moist; face flushed; temperature 103°; area of splenic dulness increased. An examination of the blood showed a large number of the plasmodia malarisa. They were all in the red blood-corpuscles, contained numerous pigment granules and some were so large that they almost filled the corpuscles.

CASE. II. A boy seventeen years of age. He entered the Boston City Hospital September 7, 1894. Family history negative. Five years ago he had typhoid fever. His health was good until six days before entrance to the hospital. During the last week he had complained of lassitude, headache, loss of appetite, malaise. He had vomited twice at the beginning of the attack. His bowels had been constipated, there having been no movement for four days; no abdominal tenderness, but a little colic. On the day of entrance, and about a week after the beginning of his sickness, he had a chill followed by sweating, and was brought to the hospital.

On entrance he had a temperature of 103° and a pulse of 100; tongue dry, with a brownish coat. Thoracic examination was negative, except for a few râles heard in both backs. The area of splenic dulness was increased. The abdomen was tense, tympanitic, without tenderness or rose spots.

Examination of the blood during the second chill on September 11th showed the presence of several fullgrown intra-cellular malarial organisms; two small extra-cellular organisms were found. The chills did not recur after quinine was given, and he was discharged well on September 20th.

Interest attached to this case in that careful personal inquiry failed to show that he had lived or worked in any of the regions about Boston in which malaria is prevalent. He came from Prince Edwards Island tered the hospital September 10, 1894, the same day

seven years ago, and since that time has lived continuously in Boston; during the last eighteen months he has lived on Northampton Street, near Washington Street. The diagnosis was perfectly clear after the observation of the recurrent chills in the hospital; but the history of general malaise for a week previous to the first chill, and the appearance of the lad strongly suggested typhoid fever, and he was referred to the hospital as a probable case of typhoid fever. The case is interesting to us in Boston as demonstrating the gradual march of malarial fever into the heart of the city; this lad lived not far from Muddy Brook, a water-course along whose banks Townsend found a good many cases in a collective examination of outpatient cases made two years ago.

CASE III. A Swede, twenty-two years of age, entered the Boston City Hospital September 10, 1894. His family history was negative. Eight years ago he had yellow fever in South America. He did not use alcohol or tobacco in excess. He was a sailor on a vessel which had been moored for several weeks in the Potomac and had arrived in Boston, September 6th, five days before he was admitted to the hospital. He was taken sick the day after his arrival in Boston, with a feeling of pain all over the body, backache, headache, and complete loss of appetite; there was no history of chill. Examination showed a man of powerful physique; his mental condition was extremely apathetic, and in response to questions his replies were slow and dull. His face was flushed, and the skin and conjunctive were somewhat yellow. His tongue was covered with a dirty, gray coat, thick and very The areas of the liver and splenic dulness were somewhat increased. The abdomen was lax, without tenderness, and no rose spots were seen.

On September 11th the jaundice was more marked. His lips were dry, cracked and bleeding. There was marked stupor. Bile was found in the urine, but the stools were not clay colored.

On September 18th he responded a little more readily to questions. The tongue was dry, cracked and bleeding. Sordes on the teeth. Pulse dicrotic. He had to-day, all over the body, an eruption of urticaria which presented rather an anomalous appearance, the central portion being yellow, surrounded by a red edge. His blood was examined twice by Dr. Stokes; and on the second examination a few small, non-pigmented organisms were found in the red bloodcorpuscles. Dr. Stokes was not willing to make an absolute diagnosis of malaria, as he did not find ameboid movements in the intra-cellular forms.

Quinine was given on the 17th; and from that time there was rapid improvement until he was discharged well a week later. The jaundice had practically disappeared before his discharge.

The appearance of this patient was that of a very sick man, the extreme apathy and the condition of the tongue and lips being strongly suggestive of a serious condition. There was no chill during the whole of his sickness; the temperature fell to normal every other day with the exception of his second day in the hospital, and on the alternate days rose rapidly to about 103°. During the first few days of his stay in the hospital there was nothing to suggest the diagnosis of malaria, and his general condition certainly was strongly suggestive of typhoid fever.

CASE IV. A Swede, twenty-four years of age, en-

as the preceding case. His family and previous history were negative. Habits temperate. He was a shipmate of the preceding case. The day after he arrived in Boston he had a severe headache, and was faint so that he was obliged to lie down.

On entrance, examination showed a man of powerful physique; face somewhat flushed; skin very hot and dry; tongue dry, with a thin white coat. His mental condition was somewhat apathetic, and he made no complaint of pain or other uncomfortable sensations. The area of the splenic dulness was increased, but the edge was not felt. Abdomen lax, and showed no rose spots. On the 13th his mental condition was better. His tongue was dry, with a thin, white coat. He had a large patch of herpes on the lips — a symptom rare in typhoid, and spoken of by Dr. Osler as very common in malaria.

The blood was examined by Dr. Stokes on September 13th; and he reported several rather small intracellular, hyaline, malarial plasmodia. These bodies, when carefully watched, were seen to assume various shapes, to push out pseudopodia. No pigment found. Diagnosis malaria.

Quinine was given on the 15th, and a gradual improvement followed, the man being discharged well

September 24th.

In this case, again, there were no chills. The rise of temperature was less rapid than in Case III, and the time of fever very irregular. The rise of temperature was so slow and the duration so long that the ordinary night and morning chart does not mark as strongly the tertian characteristics of the case as the four hourly chart does. Though this man was at no time sick enough to cause any alarm, yet his constitutional condition on the days of comparative apyrexia was much less good than we see here in the North in common cases of tertian fever.

In both these cases the prodromata prolonged and rather severe, the marked mental disturbance, and in the first case the severe constitutional disturbance with jaundice are suggestive of the remittent type of malarial fever. Also the absence of chills and the failure of the temperature to fall absolutely to normal on the days intervening between the days of the height of the fever are characteristic of remittent, rather than intermittent fever. In remittent fever the temperature is usually higher and the remission less marked than in these two cases cited. These two cases are to me most interesting, as I have not seen malarial fever of the tertian type, severe in character, without the occurrence of rigors. The blood examination showed organisms of the type usually found in the ordinary forms of intermittent fever. In remittent fever the parasites have not been as carefully studied as in intermittent; but several observers simply make the statement that crescentic forms are found in this type of fever, the same organisms found in severe forms of malarial cachexia. Crescentic organisms were found in a fatal case of remittent fever, which Dr. Cutler reported to the Section for Clinical Medicine, Pathology and Hygiene last spring.

In the two last cases reported no pigment was found in the parasites; in such cases it is of much importance to examine the blood fresh, as the observation of ameboid motion in the parasites excludes all possibility of mistaking the organism for vacuoles or changes in the refraction of the corpuscles dependent upon drying or other artificial conditions. The value of the micro-

scopic examination of the blood in malaria is demonstrated by the following quotation from Dr. Councilman's article on the malarial parasites: 2 "In an examination of one hundred and fifty cases we have not a single negative case to report. We have, however, excluded all cases that had received quinine. We have not hesitated to exclude malaria in all cases where no quinine had been given, in which two examinations failed to find the parasites, and further observation of the patient has in each instance confirmed the justice of this diagnosis."

Continued observation has not as yet determined whether the various forms of parasites observed represent distinct species, or simply different stages of development of one and the same species. In tertian fever careful research has traced the development of the small hyaline inter-corpuscular form seen before the chill through its mature form with pigment to its final breaking up with the formation of so-called

" spores."

Mannaley, in a recent monograph on the malaria parasites, considers that the different forms seen represent not different shapes of one and the same organism, but real species which do not tend to pass one into the other. As he claims this theoretical consideration is borne out by the clinical observation that one type of fever does not, as a rule, pass into another.

On the other hand, Babes, writing contemporaneously and with equal facilities for observation, considers that no proof has been established of the exist-

ence of different species.

Apparently at the present time we can only say, that in the intermittent forms we find intra-corpuscular, hyaline and more or less pigmented forms, while the half-moon forms are found in malarial cachexia and

other atypical forms.

CASE V. An Italian, thirty-six years of age, single, hodcarrier. The father died of consumption, the mother of dropsy. Patient had malaria six years ago in Springfield while working on a sewer, and was sick for four months. Twelve years ago he had gonorrhea, and at the same time an ulcer on the penis on account of which he received internal treatment in Bellevue Hospital. He denied all knowledge of secondary symptoms, and took no medicine after leaving the hospital.

He entered the Boston City Hospital August 21st. He was well up to July 1st, since which time he had complained of pain in the head, most marked in the left temporal and frontal region. The pain came on in the evening, was worse at midnight, and gradually disappeared towards morning. He had worked as a hodcarrier until just before entering the hospital, though latterly suffering somewhat from shortness of breath.

Physical examination showed a man of good development. No emaciation; marked pallor; tongue clean, pale. Thoracic examination negative. Liver, spleen and abdomen negative. Glands in the neck, axillæ and groins slightly enlarged. Breath offensive.

August 25th he complained of sore throat. On the left anterior pillar of the fauces a gray patch about half an inch long was seen; there was a red areola surrounding it, and the posterior cervical glands on the same side were swollen. A bacteriological examination made from a swab showed no Klebs-Löffler bacilli.

² Fortschritte d. Medicin, Nos. 12 and 18, Juli, 1888.

On August 29th his throat was better, and he was up and dressed.

I first saw him September 2d. He was then confined to the bed. His color was extremely pale, with a slight yellowish tinge. Mental condition rather apathetic. All movements slow; and even turning in bed was apparently a great exertion. Breath foul.

September 5th. Several small submucoid hemor-

rhages along the gums.

September 7th. Gradual loss of strength. Report of blood examination by Dr. Stokes:

Red .									2,209,375
White									75,000
Hemoglobi	n								25%
Proportion		ite 1	to re	d					1 to 28
			D_{i}	ferer	ıtial	Cour	nt.		
Small mon	onu	cles	ır T	•			٠.		60%
Large mon	onu	cles	LT						37.2%
Neutrophil									3.2%
Myelocytes									0.2%
Ecsinophile									o

In counting over leucocytes, two nucleated red blood-corpuscles of normal size were seen. No poikilocytosis present. The red cells are of fairly average size. The gross blood-count is typical of leukemia; the increased percentage of small mononuclear leucocytes, as shown by the differential count, enables us to make in connection with the symptoms a fairly positive diagnosis of lymphatic leukemia. The presence of nucleated red blood-corpuscles, of myelocytes and the increased percentage of large mononuclear leucocytes make it probable that there is some involvement of the bones and spleen, although the process is mainly one of a lymphatic disease. Pathological diagnosis, lymphatic leukemia.

September 11th. Gradual loss of strength. Slight bleeding from the gums. Breath foul. No enlarge-

ment of spleen.

September 13th. Pulse small but regular. Small blood-clots on the lips and gums, which the patient appeared too weak to care to remove. On the breast and forehead a few small petechial spots seen. Blood examination by Dr. Stokes:

	Di	fferen	ıtial	Cour	nt.		
Small mononucl		•	•	•	•	•	94%
Large mononucle	BBT					•	3.8%
Neutrophiles .							2.2%
Rosinophiles .				_			0

In counting five hundred leucocytes, five nucleated red blood-globules were seen, but no myelocytes. No poikilocytosis. During the day he appeared very weak, and in the afternoon he sank rapidly and died.

I report this case as a type of the value of the differential blood count of the leucocytes. The absence of splenic tumor and the small size of the lymphatic glands, as none of them were larger than a goodsized almond, suggested the diagnosis of anemia as the essential factor. The man's general condition on entrance did not even warrant the diagnosis of pernicious anemia. The differential count showed that the increase in the white cells was dependent upon a part increase in the small mononuclear elements, there showing in the first count 60 per cent. and in the second 94 per cent. of the total number of leucocytes, instead of the normal proportion of 20 per cent. On the other hand, the eosinophiles were absent in both counts, showing that their presence is of no importance in leukemia, as was considered when diseases of the blood were first studied by color reagents a few years ago.

Pernicious anemia was ruled out by the relatively small percentage of hemoglobin and the absence of blood-corpuscles of abnormal shape and size, the socalled poikilocytosis.

Recently attention has been called to the association of ulcerations in the mouth and along the intestinal tract with leukemia of acute course. Askanazy has published in the 137th volume of Virchow's Archiv a careful microscopical examination of these ulcerations in a case of acute lymphatic leukemia. According to Askanazy the ulcerations are dependent upon a growth of lymphoid elements which mechanically interfere with the circulation, and thereby causes a necrosis of the mucous membrane. In our case the only symptom suggestive of ulceration in the intestines was the presence of loose dejections; the abdomen was not tender. But the ulceration in the throat was not diphtheria, and it was not accompanied by the fever and constitutional symptoms usually found in ulcerative tonsillitis. I think, on the whole, it is fair to assume that the ulceration in the throat was dependent upon the leukemia. The symptom is certainly of sufficient importance to draw one's attention to its prognostic value when observed.

I am indebted to Dr. Buckingham for permission to report these cases, which entered his service while I was acting as a substitute for him.

was accorded as a capositate to: missi

SOME OBSERVATIONS ON TUBERCULAR MEN-INGITIS.

BY A. B. AUSTIN, M.D., DORCHESTER, MASS.

In these days of medical discoveries, when cancer, phthisis, and other diseases formerly considered necessarily fatal, are so carefully studied and so successfully assailed, it seems strange, that another of the so-called fatal diseases, tubercular meningitis, has received so little attention; and, while the unfortunate outcome of all the following cases shows that I am far from reaching a solution of the difficulty, I hope that their report may increase, if in ever so slight a degree, our knowledge of its peculiarities.

CASE I. A boy, two years of age, with no tubercular family history, father and mother both living and in excellent health, had been well from birth, was breast fed, and had the usual number of teeth. When first seen he had been vomiting for four days, and was cross and peevish; the vomiting had no connection with taking of food. The child flushed and turned pale alternately, had a retracted abdomen, constipation and thirst. On the fifth day he was vomiting at intervals; the pupils were dilated, but reacted to light; pulse was 120; temperature 101°. There was no cry, no twitching of muscles, no convulsions; but the child was inclined to sleep, though readily aroused and intelligent looking. There was evidently no headache, as the hands were not carried to the head. There were sordes on the lips. On the ninth day, the respirations were irregular in rhythm, the child was more somnolent and refused food utterly; the temperature was 100° and pulse 100. On the tenth day the temperature was 99° and pulse 92; the child was comatose and could not be aroused; the pupils were unequal, and there was excessive oscilla-tion of the eyes. The eyes were partially closed; there was extreme conjunctivitis; and the respirations consisted of three barely noticeable ones, followed by

three deep ones, followed by another series; there were involuntary movements of the limbs of a clonic nature, and he cried out at intervals. On the eleventh day there was ptosis of the right eye and paralysis of limbs on that side. On the twelfth day the pulse was 160, temperature 104°; and there were convulsive movements on the left side. Child died on the thirteenth day.

CASE II. A young man, seventeen years of age, always healthy, parents living. After two weeks at the seashore, where he indulged largely in sea-bathing, was suddenly taken with severe pain over the left parietal and frontal bones, which was increased by movement; movements were also painful. There was occasional vomiting, without reference to the taking of food, anorexia, constipation, and some photophobia. There was no discharge from the ear, nor had there ever been. Patient complains of feeling sleepy. first seen on the fourth day of the disease, the skin was hot, dry and of a tawny color; the pupils were contracted and oscillating; the conjunctive were yellow. There was an expression of pain on the face, increased at times; the tongue was coated with a white fur, dry, pasty, but not tremulous. The abdomen was flattened; there was no gurgling and no pain. The pulse was 80, full and tense; but there was no temperature. The speech was thick, and required considerable effort. The urine was normal, with the exception of bile. Lungs and heart were negative. On the sixth day there was some delirium, sharp cries at intervals, and for the first time a mild convulsion. On the seventh day patient was only partially conscious, and was aroused with difficulty; vomiting had ceased; the right hand was moved awkwardly; and there was some loss of motion and sensation. The hand lay as if something were in its grasp. Temperature was now 101°, pulse 60, and there was still slight photophobia. On the eleventh day pupils were moderately dilated, equal, and still reacted sluggishly to the light. Motion in right leg and arm was impaired. There was deep stupor. Urine was passed involuntarily; and introduction of catheter showed no accumulation in the bladder. On the twelfth day there was internal strabismus of both eyes, and both pupils widely dilated, irresponsive to light, with the left longer than the right. The mouth was drawn to the right and the saliva dribbled and she had vomited twice, without reference to the from it, while the feces were passed involuntarily. There was ptosis of the right eyelid; and the right foot was in position of talipes varus. Pulse varied from 80 to 100, very erratic. From this on the condition remained about the same, with pulse increasing in frequency and diminishing in strength. The respiration became very irregular, varying from 40 to 60 in the minute; and he died quietly on the seventeenth

Case III. A man, twenty-six years old, of Irish parentage, father and mother living; one and one-half years ago had a cough, and returned to Ireland. In the early winter, six months ago, he began to grow emaciated, lost appetite, and the cough returned. Present illness began five days ago, with vomiting and headache. Vomiting is continuous, and has no connection with taking of food. Upon inspection there perature was of an irregular type running from 100° is found a spare man, very much emaciated, with large in the morning to 102° in the evening. scars of ulcerated glands in neck and groin. pupils are contracted and sluggish, alternately con- coma, but when aroused answered questions in a semitracting and dilating. There is dulness at right apex, intelligent manner. Her pupils remained widely dilated,

tions. On the sixth day, patient is in a state of semistupor, with Cheyne-Stokes respirations well-marked, very restless and constantly putting hands to head or genitals. He also has chewed up the greater part of the sheet, wrinkles his forehead, and has marked photophobia. The urine is not passed, and the introduction of the catheter shows a full bladder. On the eighth day there is conjunctivitis; the pulse is irregular, varying from 80 to 120 under the finger; the eyes are in constant motion, with pupils widely dilated and insensible to light. There are short intervals of consciousness; and the abdomen is flattened and concave. On the ninth day the stupor is complete; the pulse imperceptible; the lips dry and covered with sordes, but there is no paralysis nor convulsions. The patient

died at midnight of this day. CASE IV. H. H., girl twelve years old, of good family history, father and mother both living, with no bistory of tuberculosis in ancestors. Has had the usual children's diseases, but has been free from disease, until the present illness, for several years. Just before Christmas of 1893, she was taken with an attack of influenza, accompanied by otitis media, with some discharge from the right ear. She never fully recovered her general health from this attack, but the discharge from the ear lasted only two or three days. From this date until February 23, 1894, when I first saw her, she complained of feeling tired, of having no appetite, and of a moderate amount of headache; and her parents said that she frequently aroused them at night by crying out in her sleep, and, when asked the cause, said it was due to sharp stabbing pains darting through her head. On the afternoon of February 21st, she was obliged to leave her school, and after coming home vomited three or four times. On February 22d she vomited twice, slept badly at night. When seen on February 23d, there was considerable emaciation; the eyes were hollow, with dark rings about them; the eyeballs were in constant activity; the pupils were dilated, sluggish to light, constantly dilating and contracting; the left cheek was flushed, the right pale; the tongue was brown, deeply coated, and tremulous on protrusion; the pulse was 100; temperature 102°, and respirations 30. She complained of a severe headache; her carotids were throbbing; taking of food. February 24th, the child passed a very restless night; slept but little; moaned, tossed about, and cried out in her sleep with a loud piercing cry; and during the night had one mild convulsive attack. Her bowels were confined, and her abdomen was flat and retracted. The tache cérébrale was well marked, and no vomiting had occurred since yester-This condition continued with greater and greater periods of sleep and gradually diminishing excitability until the 27th, when an ophthalmoscopic examination of the eyes showed no evidence of tubercle. To-day, for the first time, there appeared some irregularity of the pulse, which became alternately slow and rapid; the breathing also had a suspicion of irregularity about it, and photophobia was well marked. There had been no cough, and the tem-

On March 4th, the child lay in a moderately deep râles, increased voice-sounds, and bronchial respira- and her lips and teeth were covered with sordes, and there was slight paresis of the left eyelid, which remained partially open when the child was asleep, while the right one was completely closed; there was some conjunctivitis of the right eye, while the pulse was quite irregular, beating at one moment 60 to the minute then running up rapidly to 80. She lay upon her side, with her knees drawn up and her hands between her thighs; but twice she has had involuntary micturition. March 5th, the pulse was 120, very restless; hydrocephalic cry well marked; semi-intelligent, with less coma; internal strabismus; temperature 101.5°; arms folded across the chest. March 8th, pulse 160, respiration 60, temperature 101.5°; abdomen distended; thrill upon impulse; dull in the flanks; emaciation very marked; occasional grunt; no paralysis. March 11th, pulse 160; conjunctivitis of left eye, which was covered with a gelatinous viscid substance causing agglutination of the lids; Cheyne-Stokes respirations well marked; semi-conscious; involuntary passage of urine and feces. March 12th, child absolutely unconscious; respirations slow and spasmodic; eyes half closed and eye-balls rolled up; pulseless; cannot swallow; ashen gray pallor of face; arms lying motionless at side. Patient died at 1 o'clock, March 18th. No autopsy allowed.

CASE V. A girl, five years of age. Her father and mother are both living and in good health; also two brothers and one sister all under ten years of age and in excellent health. This child was bottle fed and healthy until three years of age when she had, so the mother states, an attack of inflammation of the brain, lasting 21 days and leaving her totally blind. For the next two years she was healthy and intelligent but never learned to walk. When the child was first seen, she was found vomiting with hands to her head, eyes wide open and staring, pupils dilated and fixed. The abdomen was flat; there was constipation and the child was tossing incessantly from side to side. mother told me the child had been sleeping badly and crying out in her sleep for some time. For three days she remained in this condition, after which the vomiting ceased, but the child became more somnolent, the pulse increased in rapidity to 120 and was notably irregular, running from 100 to 120 under the finger. After an interval of ten days the child became utterly comatose; respirations would at one moment be almost entirely absent, and then increase in intensity to an almost sighing respiration; the left arm became helpless; the urine was passed unconsciously; and after three days of utter coma, from which the child could not be at all aroused, she died on the fifteenth day of the disease.

In the above cases our attention is first called to their causation, and a prolific field of inquiry is at once opened up, which is still on the borderland of speculation. Cases I and V can only be explained by heredity; and while no history of tuberculosis can be discovered in the immediate family, it is, we well know, not unusual for diseases hereditary in their nature to skip one or two generations and then appear in full vigor, as if intensified by their long suppres-Whether this predisposition means that bacilli are in the meninges at birth and only require favorable conditions for their multiplication; or whether the soil is favorable at birth and the bacilli enter afterwards, I think no one knows. Suffice it to say, however, if we could state with any assurance at birth, "This child will become tuberculous," we should have the final consideration, that of treatment. It certainly

made a great advance in its treatment by putting the child under especially hygienic conditions. In Case II, in the efforts to guide a catheter into the bladder with a finger in the rectum, there were found some enlarged vesiculæ seminales, which were probably tuberculous and formed the nidus from which the bacilli escaped. The source of infection in Case III was, of course, in the tuberculous lungs; but again we are in the region of speculation when we try to explain why so few of the many sufferers from phthisis have meningeal complications. In Case IV, on account of the age, we are led to wonder whether we may not have a case of primary tuberculous infection of the envelopes of the brain through the nose. know how readily erysipelas and diphtheria, or rather its toxines, may be absorbed through the Schneiderian membrane, then why may not tuberculous infection of the brain take place through the nose, either directly or by means of those ugly ulcers caused by crusts, which children have and which may be tuberculous while the child is supposed to have catarrh? Since we are becoming more and more convinced of the infectiousness of phthisis, why is it not possible to have primary cerebral infection?

An analysis of the symptoms shows that vomiting was constant, more of regurgitation than true emesis, and was unaccompanied by the foul tongue so characteristic of vomiting of gastric origin. The pupils presented, next to the former, the most constant symptoms, being dilated from the first in three cases and contracted in two, but all possessing that peculiar rapid alternation of contraction and dilatation of limited degree. Retraction of the abdomen was also noticed in all, frequently of such a degree that it seemed as if water could be retained in the shallow basin formed by the depressed abdominal walls. The peculiar cry was present in four cases and absent in one; while in one case it consisted of series of three crys, gradually increasing in intensity to a climax and then ceasing. The pulse at first was simply hard and full, not unduly increased in frequency; but as soon as pressure on the brain begins, the pulse became extremely erratic. This irregularity was of the nature of a dicrotic pulse in some cases; in others, of a great variation in frequency, which occurred rapidly while one's finger was at the wrist; while in still others a pulse of great frequency in the forenoon would be followed by a slow one in the afternoon. The paralyses were chiefly ptosis of one or both lids, strabismus (always internal), loss of motion of arm or leg of one side, and The breathing at loss of control over sphincters. first was simply hurried, with an occasional sigh; but soon there became established a typical Cheyne-Stokes respiration or a modification of it which consisted of three long-drawn breaths, followed by complete cessation of respiration, or at least so slight as to be imperceptible. The duration possesses some interest for us; and we find these cases lasted respectively, 13, 17, 9, 18, and 15 days, or an average of 142 days, starting from the period of the first marked symptom, which was usually vomiting.

As to the possibility of recovery, while it is true they all died, yet nature seems to have made a great effort to throw of the disease - in Case V with partial success, since the blindness could have come only from a previous attack, which, if not cured, underwent a remission of two years; and this brings us to seems that if chronic hydrocephalus can be so greatly benefited by opening the brain and draining, under almost analagous circumstances, meningitis, when it reaches the stage of exudation, could be largely benefited by the same means. It is very evident, after watching a few cases, that the ultimate cause of death is not the studding of the meninges with tubercles, but the pressure on the brain resulting from the fluid induced by these, and if it were possible to relieve this pressure, there might be some chance for recovery. It is, moreover, the apparent hopelessness of this disease which has dissuaded surgeons from this procedure, a thing which they would very quickly do if the meningitis were simple and due to middle-ear infection.

Clinical Department.

A CASE OF SYMPHYSEOTOMY.

BY LEONARD WHEELER, M.D., WORCESTER, MASS., Obstetrician to the City Hospital; Visiting Physician to the Memorial Hospital.

THE operation of symphyseotomy was first done in America, March 12, 1892. It came with the best of credentials from Italy, where it was well known, and had for patron in this country Dr. Harris, of Philadelphia, who read papers on the subject in January, 1883, and January, 1892.

In the year 1892 there were in America eight cases. In the year from March, 1893, to March, 1894, approximately there were 31 cases. Dr. Harris estimated in January of this year that the world's record of cases in 1893 would reach 200. All of which goes to show the rapid growth in popularity of the modern operation.

It drives the operation of craniotomy on the living child quite out of the field, much reduces the territory of the successful modern operation of Cæsarean section, and greatly curtails the realm of induced labor.

As to safety, its mortality in proper cases done at the proper time is almost nothing. In cases done of necessity at an improper time, its mortality will be less than that of its competitors under the same circumstances. Six weeks ago I had occasion to do the operation.

The patient had entered the maternity ward of the Worcester City Hospital, September 13, 1894, for the purpose of consultation. This was during my vacation, and I did not see her at that time. She was seen by Drs. Greene, Ward, Delahanty and Gilman, who decided to elect symphyseotomy rather than to induce labor at about that time, thirty-five weeks after her last menstruation. She was advised to return the first of October. I saw her first October 3d.

The patient (Mrs. D.) was twenty-eight years old, Irish, well developed and well nourished, pregnant for the seventh time. She had miscarried once. Her first confinement was in July, 1887. She was in labor thirty-six hours, and was delivered by forceps of a living child. The child was small, asphyxiated, and resuscitated with difficulty. The second confinement was in October, 1888. Labor twenty hours. Tarnier forceps. Prolapse of cord. Child of medium size, still-born. The third confinement was in Octo-

ment was in 1892. Labor twelve hours. Tarnier forceps. Child, dead, weight nine pounds. In the fifth confinement the labor lasted forty-eight hours. Version. Still-birth. Child of medium or large size. Her last menstruation had ceased January 15th. She was now within three weeks of term. The pelvic measurements were:

Spines					22 cm.	83 in.
Crests	•		•	•	26.5 cm.	10 in.
Ext. cong.		•	•	•	19.5 cm.	74 in. 31 in. scant.
Cong. vera estim	REGG	•	•	•	s em.	
Width of symphy	7618					2 in.

If I had had the alternative of induced labor, I should have seriously considered it. As it was, there was no alternative, and labor at term must be awaited. At that time I would be guided by the nature of the child's head in deciding whether to make a trial of forceps before resorting to symphyseotomy. Version in a pelvis of this shape would be out of the question.

October 23d, at 7.30 A.M., labor began. Presentation O. L. A. Head of good size and firm structure. At 2 P. M., dilatation was complete, the membranes unruptured, and head free above brim. The membranes were ruptured between pains, an assistant making firm pressure on the head from above in order to prevent, as far as possible, the descent of the cord. At 4.15 the head was not engaged though the pains had been good. Patient was etherized and Tarnier forceps applied. Traction was made for fifteen minutes with no effect. Symphysectomy was then done. The patient was lying across the delivery bed. She had been previously prepared: genitals shaved and parts internally and externally sterilized with soap and water, followed by bichloride solution. The vagina was again thoroughly cleansed with suds, rinsed and washed out with gauze wet in bichloride solution.

An incision was made from an inch above the upper edge of the symphysis, nearly to its lower edge. In order to introduce the finger behind the symphysis with comfort it was necessary to separate the attachments of the recti a little on each side. The tissues were then easily separated from the posterior surface of the bone. The urethra was drawn to the right by an assistant. The Galbiati knife was hooked under the lower edge. The lower angle of the wound was pulled down until the probe point of the knife was felt. The two inches of pubis was easily cut through, and the bones sprang a finger's breadth apart.

This was followed by free venous hemorrhage from the torn vessels of the richly supplied tissues under the arch — checked without difficulty by pressure with a wad of gauze. The forceps was again applied, and the head delivered in fifteen to twenty minutes. The cord was twice about the neck, tightly drawn, and so short that it could not be loosened. It was tied and cut, and the child immediately extracted. It was considerably asphyxiated, but was soon resuscitated by an assistant. It was a male - weight, eight pounds and ten ounces, length, twenty and one-half inches. The placenta was extracted by external pressure — weight two pounds, length of cord twenty-six inches. The passage of the head through the pelvis forced the bones two and one-fourth inches apart, and the venous hemorrhage was again free. During this time the sides of the pelvis were firmly supported by the assistants who were holding the legs. The soft parts bulged into the wound and rolled out of the vulva a ber, 1890. Labor seven hours. Tarnier forceps. good deal more than in a common forceps delivery. Living child, which was small. The fourth confineintrauterine douche of bichloride (1-5,000), followed by plain water, was given. The wound was sutured with deep stitches of silkworm-gut and superficial silk. No attempt was made to unite the bones, and no drain was used. The urethra was again held aside while the knees and trochanter were pressed together and three two-inch plaster straps bound about the pelvis. The patient was then turned into bed and a binder put on.

The only event of the puerperium, beyond a troublesome constipation, was a slight phlebitis causing some
swelling and pain in the left leg. I think I was overcareful in keeping the patient on her back three weeks.
In half that time it is safe to allow turning upon the
side. At the end of three weeks a swathe with
buckles took the place of the adhesive strips. At the
end of the fourth week she walked, and a week later
went home. I examined the joint at the end of three
weeks, as the patient lay in bed. I could feel no intervening space. By flexing and abducting the legs
I could feel a little motion. At the end of the fourth
week, examining the patient standing and swaying
from one foot to the other, I could feel perhaps onethird of an inch of motion.

The measurements of the child's head taken soon after the birth were:

						Norma
Biparietal					4	3}
Sub. occipito bregmatic	•		•		4	81
Occipito frontal		•		•	4	4
Occipito mental					54	5

A head above normal in all diameters.

A few words as to what can be gained by separating the pubic symphysis. Experiments made on the cadaver of pregnant women, as well as actual experience, have shown that the limit of safety in the separation of the bones is two and three-quarters inches. The increase of conjugate thus obtained is rather more than half an inch. It is estimated that a quarter of an inch of the biparietal diameters of the head bulges into the opening; also that it is compressed one quarter of an inch. These three factors together make up a full inch, so that with a normal head with a biparietal of four inches, we might expect easy delivery by symphyseotomy in a pelvis with a conjugate of three inches. If the head is small this could be reduced to two and three-quarters. This is regarded as the lowest narrowing adapted to the operation. A greater narrowing is better met by Cæsarean section. The upper limit is three and one-half inches (Morisani), or if the pelvis is generally contracted four inches (Garrigues).

Mortality of the Operation .- Among foreign operators, Zweisel of Leipsig nearly a year ago had had 23 cases with no death. Pinard's first death was his twentieth case. In Italy, from 1886 to 1893, there were 48 operations, with two deaths. "Up to date, there have been 60 operations in the United States, and four in Canada. There were 31 in 1893 in the United States, and there have been 18 this year. No death of a woman in the last 20, one death in the last 30, 2 deaths in the last 41. Six children lost in the last 41. No death of child or mother in the Canada cases. These American statistics have been kindly furnished me by Dr. R. P. Harris, under date of December 3, 1894. The deaths for the most part have taken place in women, very long in labor, and often septic at the time. When the operation is done under such conditions as I had, there should, of course, be no mortality. As

to the ultimate results, statistics are not so complete. Very few poor results are as yet published, and it seems assured that very few are to be anticipated.

FAIRLY EXTENSIVE CAUSES OF UPPER-LIP EXCISION; FREEDOM FROM RECURRENCE AT END OF THREE YEARS.

BY CHARLES A. POWERS, M.D., DENVER, COLO.

In September, 1891, Dr. Alex. O. Snowdon, of Peekskill, N. Y., referred to me Mr. H., a man of fifty years, who gave a history of having first noticed a small nodule at the middle of the right half of the upper lip one year previously. The growth had been slow and painless, and there had been no ulceration.

Examination revealed a hard swelling which occupied the right half of the upper lip, limited above by the ala nasi, extending a little beyond the median line to the opposite side and somewhat beyond the angle of the lip upon the cheek. The skin was thickened, but normal in color. The mucous membrane seemed normal. A small piece was removed, and examined by Dr. Farquhar Ferguson, who pronounced it epithelioms.

An operation was performed under ether. The entire mass was cut away, the incision including about half an inch of tissue outside the induration limit in all directions. This included the margin of the right ala nasi. A short incision was made out on the cheek, and the cheek tissues loosened. The remainder of the lip was loosened, and the flaps approximated and held in place by silver and silk sutures. There was prompt union throughout. Microscopic examination of the part removed showed a fine margin of healthy tissue in all directions.

The patient has since been seen at intervals of three months. There has been no evidence of recurrence. In November, 1894, Dr. Snowdon writes: "I saw Mr. H. to-day. There is no sign of recurrence."

The foregoing case is not exceptional. While cancer of the lip more frequently affects the lower, it is occasionally seen in the upper. The prognosis in the upper lip is better than in the lower, because of the lesser lymphatic connection. The case serves, however, to illustrate the advantage of wide excision. So far as we know to-day, excision offers the best prospect of cure in carcinoma. The key-note may be stated as: Early diagnosis, prompt and wide excision, and careful surveillance of the patient afterward. This is trite; but that it is not sufficiently understood is proven by the large number of cases subjected to palliative treatment which reach the surgeon too late to permit the thought of cure.

So in a recent report by the writer of cases admitted to his service at the New York Cancer Hospital, it was shown that in 81 per cent. of these cases the disease had so far progressed that operative procedure would be purely palliative. In this article the proposition was made to classify cases of operable cancers as follows:

(1) Those in which the disease is so limited that it is thought reasonably probable that it is entirely excised and that the patient has a fair prospect of cure.

(2) Those cases in which the surgeon is doubtful, after removal, whether he has gone beyond the limits of invaded tissue.

¹ See New York Medical Journal, April 14, 1894.

(3) Cases frankly incurable, in which a palliative operation affords a fair prospect of adding to the life

and comfort of the patient.2

It is obviously irrational to place in the same class a small epitheliomatous ulcer of the lip and a case which has so far progressed that operation must be purely palliative. Under the foregoing classification the case of Mr. H. would come under the second heading.

Medical Progress.

RECENT PROGRESS IN OPHTHALMOLOGY.

BY MYLES STANDISH, M.D., OF BOSTON.

MICRO-ORGANISMS IN THE CONJUNCTIVAL SAC.

BACH I found in apparently healthy conjunctival sacs twenty-seven micro-organisms; of these, ten were pathological. Each of these were planted upon an abraded surface on a disinfected rabbit's cornea with the following results:

(1) Micrococcus albus liquefaciens of Besser. This produced a slight gray infiltration about the point of infection which disappeared in four days. Some

pericorneal injection. No iritis.

(2) Micrococcus pyogenes aureus, an extremely distinctive pathogenic organism.

(3) Micrococcus pyogenes albus. This is also a

very active and destructive organism.

(4) Micrococcus flavus liquefaciens, which is said

by Flügge to exist in air and water. This produced corneal ulcers and muco-purulent secretion.

(5) Diplococcus citreus conglomeratus. This organism is found in blennorrhagic discharges and in aërial dust. This produced after twenty-four hours a well-defined gray infiltration which disappeared in three days. Pericorneal injection. No iritis or hypopion.

(6) Micrococcus aurantiacus, which produced a gray infiltration about point of infection which soon disap-

appeared.

(7) Staphylococcus cereus flavus, which gave rise to corneal ulcer in twenty-four hours after inoculation, with iritis and sometimes hypopion.

(8) Micrococcus coryzal, infiltration about infected point with pericorneal injection and iritis, but no hypopion.

(9) Streptococcus pyogenes, which set up a rapidlyspreading ulcer with iritis and hypopion.

(10) One unknown backerium resembles the micrococcus caudidus of Cohn, which our author frequently found in the sero-pus of acute conjunctivitis and which he names micrococcus conjunctivitidis minutissimus.

To determine what importance the presence of these micro-organiams played in the question of antisepsis in ocular surgery, Bach introduced into the conjunctival sac certain organisms which were known not to be present either in the conjunctival sac or the nose and as a result of his experiments concludes that the infection is carried from the conjunctival sac into the nose and never in the opposite direction as long as there was no obstruction of the lacrymal canal, even in the presence of a purulent dacrocystitis, this was true as long as there was partial drainage into the nose.

¹ Von Graefe's Archiv. f. Ophthalmoscopie. Band xl, theil. 3, p. 131.

Thirty-seven experiments were made to determine whether the tears possess any germicidal quality or simply weaken the morbid action by washing away the colonies. In sixteen of these experiments the pathogenic bacteria were exposed for an hour to tears warmed to 58°-70° Celsius, and in ten instances the colonies were greatly decreased; in six there was less marked diminution. In nineteen experiments in which the tears were kept at ordinary temperature only four showed an increase of the colonies. Further experiments showed that the aqueous taken from the human eye had no germicidal action, and that the staphylococcus flourished upon a soil of vitreous humor. Our author believes in the mechanical removal of the germs by the washing out of the conjunctival sac and the edges of the lids with damp cotton, instead of the application of antiseptics for their germicidal effect; and he advocates the use of the physiological salt solution in this cleansing process. He thinks that the salt solution should be used in any event whether antiseptics are used or not.

Our author, however, thoroughly believes in the disinfecting action of eye salves and after many bacteriological observations concludes that pure American vaseline is in itself a valuable germicide and should be employed as a vehicle for the medicaments used. Experiments showed that sublimate salves 1-3000 and nitrate of silver, two per cent., killed bacteria in a few minutes. He made a number of experiments with the surface layers of the boxes of ointment in daily use in Würzburg Eye Klinik, taking the ointments before mentioned and one of one-half per cent. of the acetate of lead and did not discover in a single instance that any bacteria were present.

TUBERCLE OF THE IRIS.

Sandford 2 reports three cases of tubercle of the iris, one of which, on account of its subsequent history is of especial interest. It was a case of primary iritic tuberculosis, the ciliary region, suspensory ligament, and apparently the lens itself, being infiltrated with the tuberculous elements. The case occurred in a child aged five years, of tuberculous parentage on both sides, whose only brother died of tuberculous meningitis. There was no evidence of tuberculous mischief in any other organ. The globe was therefore excised and sections made. The tuberculous mass half filled the anterior chamber. The patient improved greatly in health and has been under observation ever since (eight years). At present she is a fragile, delicate-looking girl, but free from any especial ailment.

KERATO-MYCOSIS ASPERGILLINA.

Fuchs s reports the case of a man, fifty-three years of age, who had an inflammation in one eye attended by fever; the fever disappeared in a few days but the inflammation of the eye continued. When first seen, nearly a month after the onset of the disease, the conjunctiva of the lid was red and covered with a trachomatous-looking papillary growth. The retro-tarsal fold was free. The central portion of the cornea had an intense gray opacity seven millimetres in diameter, separated by a sharply-curved furrow from the surrounding cornea. This portion of the cornea was dry, yellow and crumbling. There was hypopion and some posterior senechise. This central portion was easily removed with forceps, but was reproduced in a

Ophthalmic Review, May, 1894, p. 178.
Wiener klin. Woch., No. 17, 1894.



² It is needless to say that no sharp lines can be drawn in such division. One estimates an individual case as best he can.

few days. As a result of this the entire growth was dissected off with a knife leaving the cornea clear, but thinned. The disease reappeared in two places, the spots were removed and then the patient was lost sight of. The removed portion was examined bacteriologically and cultivated by Professor Gruber and found to be aspergillus fumigatus. The patient had had no injury to his eye. He was by occupation a miller.

DESCEMETITIS.

Snellen * reports two cases of Descemetitis in which a micro-organism was found in the clots of material formed upon Descemet's membrane.

The first case, a lady twenty-eight years of age, had a very marked Descemetitis. The lower third of the cornea was dotted with specks of different sizes. After dilatation of the pupil circumscribed opacities were observed in the lens, which our author thinks were of the same character. After some days an increase of tension appeared, and as it persisted and was accompanied by haziness of the cornea and diminished vision a sclerotomy was performed. With the aqueous tumor one of the clots came out, which upon examination was found to consist, not of a cluster of cells, but a collection of microbes. As soon as possible they were transmitted to agar-agar, where they grew but very slowly. Closer examination, after staining with carbolfuchsine, showed that they were very short bacilli.

The second case was a young man who came with a Descemetitis of three months' standing. As in this case also a paracentesis had to be performed, great care was taken to secure one of the clots; this was accomplished with considerable difficulty, as the clot proved to be very adherent to the cornea. In this instance the microscopic examination showed the cells as described in the text-books, but between them were microbes similar to those in the first case. Snellen did not succeed in cultivating them, and supposes that this clot was an older one than the other, as it was more adherent to the cornea, that it had attached cells and that the microbes were already dying off.

Subsequently the first case returned, complaining of irritation in the other eye. By focal illumination. very small, hazy spots were to be seen on the posterior surface of the cornea; they became denser, and soon assumed the ordinary appearance of Descemetitis. In this case it was not true that the clots were situated in a triangular arrangement on the lower third of the cornea; and our author is inclined to think that they may originate anywhere, and subsequently become loose and fall down, and stick again to the cornea in its lower part. Snellen concludes that Descemetitis is really a disease sui generis, and therefore it is appropriate to take up the old name instead of calling it serous iritis or cyclitis; and secondly, that it is due to microbes growing in the anterior chamber, which by producing toxines cause an irritation of the uveal tract. The clots are at first situated on the cornea, afterwards on the iris and lens, and may be also in the ciliary body. They contain in their early stages only microbes, but later are intermingled with leucocytes.

REPORT OF THE VALUE OF OBJECTIVE TESTS FOR THE DETERMINATION OF AMETROPIA; OPHTHAL-MOSCOPY, OPHTHALMOMETRY AND SCIASCOPY.

A report on the above subject by a special committee appointed by the Ophthalmic Section of the American Medical Society may be abbreviated as follows: The committee consisted of Edward Jackson, M.D. (Chairman), S. M. Burnett, H. V. Weirdemann and J. A. Thompson

J. A. Thompson. Ophthalmoscopy. - The measurement of refraction with the ophthalmoscope enables us to immediately assign an approximately just share to the influence of ametropia in causing imperfect vision. The lens required to give a clear view of the fundus, informing the observer of the hypermetropia or myopia present, and the distinctness of the view indicates the presence, degree and regularity of astigmatism. And all this is accomplished in perhaps the fraction of a minute. Of the ability of the ophthalmoscopic examination to reveal latent hypermetropia, there must always be some doubt, for in a certain proportion of cases it fails to accomplish it. Of the exactness of the determination made with it, the committee accept the statement of Loring, that it will measure hypermetropia or myopia to within 0.50 D. or recognize the presence of 0.75 D. astigmatism, and the direction of its principal meridians. It must be clearly understood, however, that this accuracy cannot be attained by all observers, or by any observer at all times or in all cases. The most serious hindrances, however, are those dependent upon the eye of the patient. If the patient's pupil is unduly small, the accuracy obtainable by this method is correspondingly diminished by the diminution of the circles of diffusion upon the observer's retina. On the other hand, if the pupil dilate moderately, as it does in a majority of cases in a thoroughly darkened room, portions of the dioptric media will be exposed at the margin of the pupil that differ materially in their refractive power from the visual zone, and thus the refraction which may really be obtained by the refraction ophthalmoscope will differ essentially from the refraction of the visual zone which is sought.

Ophthalmometry, which would be more appropriately named keratometry, by measurement of the curvature in different meridians, the existence and amount of corneal astigmatism is determined to within 0.25 D., or less if the patient be steady, the other conditions favorable, and the observer's vision is not impaired by The directions of the principal meridians irradiation. of the corneal astigmatism are also determined with an accuracy dependent somewhat upon the amount of the astigmatism, but even for low degrees with practical exactness. But the ophthalmometer being simply a keratometer, gives no information as to the degree of hypermetropia or myopia present, and only indicates what may be the total astigmatism, if that conforms to the corneal astigmatism; of the conformity of the corneal to the total astigmatism, statistics now before the profession enable us to judge. From them the committee draw this conclusion, that the chances of conformity between the corneal and total astigmatism are not sufficient to justify reliance upon the ophthalmometer as a means of showing the cylindrical correction required in the individual case.

Sciascopy or Retinoscopy is upon the whole the most accurate and reliable objective method of estimating ametropia. It measures the total refraction of the eye, whether this be the static refraction or the refraction modified by accommodation. Applied in the direction of the macula, it measures in the visual zone exactly the refraction that is measured by the subjective method, and at the same time it measures the refraction outside of the visual zone, as it is possible to

Ophthalmic Review, August, 1894, p. 259.
 Journal of the American Medical Association.

measure it in no other way. For eyes having a distinct and sufficiently extended visual zone, it is accurate to within one-eighth of one dioptre. When, however, the visual zone is too small to study at a convenient distance, or the refraction passes by imperceptible gradations into entirely different refractive conditions surrounding it, the difficulty of applying the test is greatly increased, and the accuracy and certainty of its results diminished.

The eyes in which the visual zone can be isolated and studied are the rule, those in which this is not possible the rather rare exception. In nearly all eyes the result of a careful sciascopic correction will give the best or very nearly the best obtainable vision.

In conclusion, the committee urge that the accurate determination of ametropia is best accomplished by the use of all these objective methods in each case, and usually in the following order. The ophthalmoscopic examination, measurement of the cornea with the ophthalmometer, sciascopy; these to be followed by the subjective determination, and if this last does not agree with the previous measurements, its findings should be submitted to a re-trial by sciascopy. Even when this plan is followed, the accuracy of results obtained will depend on the experience, habitual accuracy of observation, physical health, mental alertness and conscientious care of the observer.

(To be continued.)

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL OBSERVA-TION.

J. G. MUMFORD, M.D., SECRETARY.

REGULAR Meeting, Monday, November 5, 1894, Dr. Frederick I. Knight in the chair. Dr. Henry Jackson read a paper on

A FEW CASES ILLUSTRATIVE OF THE DIAGNOSTIC VALUE OF AN EXAMINATION OF THE BLOOD.1

Dr. Morse: I wish to emphasize the importance of examination of the blood in all suspected cases of malaria. It seems to me that in this way and in this way only can a positive diagnosis be made in many doubtful cases; and even in many cases that seem perfectly certain clinically, it is a satisfaction to have your diagnosis confirmed. The examination is not difficult, taking but little time and not a great deal of ex-An oil immersion-lens is indispensable. I prefer the examination of a fresh specimen to any method of staining. A drop of blood is taken from the lobe of the ear and placed on a cover-glass. specimen may be preserved some time by using vaseline. It is better to cut off parts of your light in looking for the plasmodium. The appearance of the plasmodium varies a good deal with the time that the blood is taken. If the blood is taken soon after a chill it appears as a hyaline body, more or less rounded, about the size of a red corpuscle, may or may not have ameboid movement, and may be inside or outside the cell. As the plasmodium increases in size it takes up pigment. The red corpuscles which have been invaded are larger than normal, have lost their normal contour, and are very much paler from the loss of pigment. Just before and during the chill the

¹ See page 633 of the Journal,

pigment is seen in the centre of the plasmodium, which is broken up into pear-shaped bodies. The cresentic forms I have not seen in cases originating in this In examining a fresh specimen it is quite important not to mistake a simple vacuolation of the red corpuscles for the hyaline form of plasmodium. A little pigment underneath the specimen will show through the vacuoles and not show through the other. Another point sometimes useful in examining a fresh specimen is to put on the full light and look for dark spots, not paying attention to individual corpuscles. When you see a dark spot, cut the light off, and you almost always find it is the pigment inside a plasmodium. The plasmodia are most abundant just before and during a chill although I think they can be demonstrated at any time. The administration of quinine renders it difficult to find them, although I have frequently demonstrated them after the quinine had been taken for a long time and in large doses.

The best method of staining is the double stain with eosine and methyl-blue, though I do not think any stain compares with the examination of the fresh specimen. During my out-patient service at the City Hospital the examination of the blood was made in all suspicious cases and found in nine. In one case the plasmodium was demonstrated in considerable numbers where the history was very indefinite; the examination was undertaken simply because no explanation of the symptoms could be made. In another case with a typical clinical history careful examination of the blood failed to reveal plasmodia, but the administration of quinine cured the case promptly.

It has been known a long while that there must be a great destruction of the blood corpuscles during malaria on account of the anemia which ordinarily follows the blood pigment in the organs and the melanemia in fatal cases. One observer estimates that one-fifth of the red corpuscles are destroyed during the febrile attack. There is some difference of opinion as to the white corpuscles in malaria. The general opinion seems to be that there is certainly no increase in their number but, if any change, a hypoleucocytosis. The alkalescence of the blood has never been investigated, but it is probably diminished as in other acute febrile diseases.

Dr. Jackson, in answer to a question, said that about five hundred leucocytes were counted as a basis for estimating the percentages.

Dr. G. F. Jelly read a paper on

A CASE OF MENTAL SHOCK.2

Dr. P. C. KNAPP: The case which Dr. Jelly has reported to-night seems to be one of peculiar interest. In many of the features — especially in the tremor and the very marked loss of memory — it recalls some of the stigmata of hysteria which have recently been so vividly described by Janet in his two admirable little monographs. Janet showed that, beside the ordinary stigmata of anesthesia, hyperesthesia, contracted visual fields, etc., the loss of will, loss of memory, the complete limitations of the sphere of consciousness are among the most striking features — notably the limitations and occasionally duplications of the sphere of consciousness. It seems to me also that in this case the symptoms are due almost wholly to the auto-suggestion of the accident, as Charcot has

See page 629 of the Journal.
 Etat mental des hystériques — Les stigmates mentaux, les accidents mentaux.

shown in many of his cases. Of course, in the majority of cases there is a combination of the psychical and the physical shock; and it has seemed to me in many cases that the influence of the psychical shock has been rather exaggerated. In this case the physical shock There is a very curious is almost wholly eliminated. feature, too, about these hysterical cases which Janet has so clearly demonstrated and which render them still more difficult in their medico-legal considerations. This feature is the fact that a very large number of these symptoms are distinctly psychical or as many people might call them, imaginary; in other words, that by hypnotism we can find that the memory, the sensibility, the motor power even when apparently lost, persist in the field of sub-consciousness. cites one of Charcot's patients at the Salpêtrière which shows this loss of memory in a most striking degree. A woman who had always been in perfect health was told very suddenly that her husband had met with a fatal accident and that they were bringing his body The news was not true, but she was thrown For many months she had into profound hysteria. absolutely no memory, especially the period subsequent to the accident, also for some time previous By hypnotizing her it was found to the accident. that there was this unconscious memory both of the period before the news was brought to her, of the fact that she had learned that her husband had been killed and of everything that happened at the Salpêtrière after that. Of course, if such a fact should be brought up in a medico-legal case, I suppose there is no jury which would not say that such a patient is simulating the whole business, but the question of simulation can be thrown out of the account entirely.

The case, furthermore, is one of interest as proving a point on which it seems to me the evidence is increasing — that these cases, although the physical accident is slight, are often serious; that the prognosis is not determined by the award of damages or by the cessation of litigation; and that where the symptoms are of such severity, we may consider that it will be a long time before the patient is restored to health and usefulness.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

SEVENTH ANNUAL MEETING, CHARLESTON, S. C., NOVEMBER 13, 14 AND 15, 1894.

(Concluded from No. 25, p. 621.)

Dr. W. L. Robinson, of Danville, Va., reported two cases of

GUNSHOT WOUNDS OF THE ABDOMEN, LACERATING THE LIVER AND BOWEL.

In neither case were the symptoms commensurate with the injury; neither shock, hemorrhage, nor pulse portrayed the necessity for operation. Yet in view of the 92 per cent. mortality from gunshot wounds of the abdomen without operation, he did not hesitate. The first case came near dying on the table; and his light being imperfect at 12 to 1 o'clock at night, he only found the liver wound, failing to find the hole in the posterior border of the hepatic flexure of the colon. The patient died in three days. His second case was operated on promptly, and the injury in the transverse and descending colon was promptly repaired with the Murphy button. The man was on a spree, and had

had no action from the bowels for three days. He pressed out much fecal matter, but should have taken more time and emptied the bowel as far as practicable. For two days no unfavorable symptoms presented themselves, but on the night of the second day distress from tympanites and pain began. He suggested to his associates the propriety of reopening the abdomen, but enemata and grain doses of calomel were tried. This the author considered was his fatal mietake, for the waiting of ten hours had lost him the chance of a lifesaving operation. He reopened, and with a medium trocar emptied the bowel of gas, but exudative lymph was manifest on bowels, and obstruction of button by feces existed. The button held its tissue firmly, and no leakage had occurred. He washed out the cavity, but patient died in ten hours of shock.

MOVABLE KIDNEY.

This paper was read by Dr. GEO. BEN JOHNSTON, of Richmond, Va. At the outset the author emphasized three propositions: (1) Movable kidney is extremely common; (2) it is capable of producing very distressing symptoms, and in many instances is a menace to life; (3) it is curable by a simple and safe operation.

The author's own experience with movable kidney from a surgical standpoint extended back a little more than three years. Prior to the first nephrorrhaphy, which he performed in May, 1891, those cases he had met with were given little or no thought. Since the date mentioned, he has looked with more interest on his cases, and has come to marvel at the frequency of the malady. He has examined a limited number of persons likely to be the subjects of movable kidney since his first operation for its relief, and in a comparatively small number of subjects he has encountered twenty-seven cases. Edebobls, who has studied five hundred cases, fixes the rate at one for every five or six women examined. Linder gives about the same rate. Osler makes no statistics, but mentions it as a common occurrence in his hospital wards. The records of these observers and Dr. Johnston's cases justify the assertion that it is a common malady.

It occurs more often in women. He had never seen one in a male subject. Age is a factor in its production. His own cases have been in subjects varying in age from twenty to thirty-five years. In only one instance has he seen it in a woman over forty. Both kidneys may be movable at the same time. The right is the one that is affected in the majority of the observed cases. This is accounted for by the relation of the kidney to the liver on this side.

Two anatomical facts help to explain the preponderance of the right over left kidney displacement: (1) the greater length of the right renal artery, aud (2) the firmer attachments of the left kidney. The author has twice seen a movable kidney follow obstruction of the ureter. It happened that both of these cases were on the left side. The increased weight of the kidney due to accumulated urine and congestion must have played an important part in the etiology of the dislocation in these two cases.

found the liver wound, failing to find the hole in the posterior border of the hepatic flexure of the colon. The patient died in three days. His second case was operated on promptly, and the injury in the transverse and descending colon was promptly repaired with the Murphy button. The man was on a spree, and had

mon, inducing a distention of the pelvis by dammed-up Hydronephrosis may follow. Calculus is thus invited by reason of poor drainage.

Apart from tumors of the kidney itself, the condition most likely to be mistaken for movable kidney is

distended gall-bladder.

Nephrorrhaphy is not indicated in every case of dislocated kidney, but only in such cases as manifest distressing or dangerous symptoms. When gastro-intestiual disturbance impairs the general health, when nervous symptoms are severe, when the dragging abdominal pains are constant, when disease of other organs is simulated, when hydronephrosis is threatened, when and professors in the operating theatre of the old one or more attacks of torsion have occurred, the operation is imperative.

The author then outlined his method of operating on movable kidney, and closed his paper with a report of seventeen cases.

Dr. RICHARD DOUGLAS, of Nashville, followed with a paper on

ACUTE PERITONITIS.

Appreciating the condition under which the colon bacillus will escape from its natural habitat and become actively pathogenic, and knowing the supply is unlimited, the dose being governed alone by the integrity of the bowel, naturally we accord to this bacillus the first place in the causation of peritonitis. In obedience to the teachings of experimental work, the surgeon must accept the classification of Pawlowski of two forms of peritonitis: first, that produced by chemical agents with which we are not concerned; second, that produced by infection. The latter is more tangible. is fully in accord with our idea of the genesis of the disease. It harmonizes with clinical work. It is an indisputable fact that the type and virulence of the inflammation are largely dependent upon the origin. There may be infection from without or infection from within, and each may be divided into immediate and mediate.

The author then reported a few illustrative cases. One case was reported of general purulent peritonitis. The patient recovered, and the author considers that it was due entirely to free incisions, thorough irrigation and ample drainage.

THIRD DAY .- MORNING SESSION. HISTORY OF VAGINAL EXTIRPATION OF THE UTERUS.

Dr. Geo. J. Engelmann, of St. Louis, read a paper on this subject, in which he stated that at the New Orleans meeting of the Association he was deeply interested in vaginal hysterectomy, which he presumed was a comparatively new operation with very recent modifications; but Dr. Lewis, of that city, called his attention to an old French pamphlet, showing that the operation had been done in the '20's. Since then he has found it was done still earlier precisely as it is done to-day, the operation having developed step by

Dr. Lewis, of New Orleans, in the discussion, stated that the first vaginal hysterectomy was performed by Dr. Dabourg in the little town of Autell,

France.

Dr. Edmond Souchon, of New Orleans, read a paper entitled

REMINISCENCES OF DR. J. MARION SIMS IN PARIS.

study of medicine in Paris, and was attached to the of cure.

service of Professor Velpeau. In the spring of the following year he by accident met Dr. Sims, who had come to Paris with a letter to Velpeau from Valentine Mott, of New York. At this time Dr. Sims knew nobody in Paris and could not speak a word of French, so that the meeting of young Souchon was a very great help to him in his intercourse with Velpeau and the other surgeons of the French capital. Sims's great object was to get a case on which to demonstrate the success of his operation for vesico-vaginal fistula. Velpeau procured a case upon which Sims operated successfully before a large audience of students, doctors Charité.

The ovation Dr. Sims received was very great, and gave him the start that made him the cosmopolitan surgeon we all know him to have been. Dr. Sims travelled and located he had more calls than he could attend to. The doctor's success, however, was not without hard moments, for twice he met cases that came very near terminating disastrously from the effects of chloroform. But their final recovery only increased the admiration of all for Sims's fine qualities . as a surgeon.

Dr. Geo. H. Noble, of Atlanta, Ga., read a paper

A CASE OF CARCINOMA OF THE PARTURIENT UTERUS. REMOVED THREE DAYS AFTER CONFINEMENT; RECOVERY.

The specimen he presented was one of carcinoma of the parturient uterus, removed by vaginal hysterectomy three days after labor. The woman had previously been confined, sustaining a laceration of the cervix uteri, which perhaps was a factor in the cause of the disease. In the first few months of the last pregnancy the patient was treated locally by her family physician, and there was nothing to cause a suspicion of malignancy. Almost the entire vaginal portion of the cervix was destroyed, less than one-fourth of its circumference remaining intact. The induration extended deep into the uterine tissue, but could not be felt beyond the limits of that organ. The roughened, ulcerated surface was easily traced for a considerable distance within the cervix, the os being dilated to about five centimetres in diameter. Her condition was unpromising, and surgical interference was clearly interdicted, so the os and vagina were cleansed thoroughly and lightly dressed with gauze. She was then placed profoundly under the influence of morphia sulphate, with a view of arresting labor, securing rest and recuperation sufficient to permit evacuation of the uterus, which occurred spontaneously twelve hours later. The child was poorly nourished, and lived only a few weeks, finally dying of inanition.

What is the advantage of hysterectomy over Porro's operation? and if hysterectomy is preferable, should the vaginal or abdominal method be given the preced-

To the first question the author answered that hysterectomy undoubtedly promises more to the mother than a Porro operation in cases where the disease is confined to the uterus, and he asserts that when the cancerous mass can be successfully removed it is the duty of the surgeon to do it, as Porro's method merely bridges the women over the puerperal state and leaves In 1860 Dr. Souchon had just entered upon the her to her fate. In radical removal there is a promise



In answer to the second question, the author said it is evident that the method of operating must depend largely upon the character of each individual case. Thus the vaginal operation may be done when it is desirable to take advantage of the diminished liability of shock, even though the large size of the uterus may render the operation more tedious.

The main point in the paper was to show the feasibility of hysterectomy in the puerperal state for cancer of the uterus, as the case reported clearly demonstrated, even though it is too early to claim immunity from the return of the disease.

LIGATION OF ARTERIES.

by Dr. John A. Wyeth, of New York.

The author said that in August, 1894, in an operation for the removal of a malignant neoplasm of the left upper jaw which involved the spheno-maxillary fissure and part of the orbital cavity, it became necessary as a preliminary operation to ligate the external artery. In cutting down upon this vessel by the usual incision — the point of bifurcation of the common carotid artery being, as demonstrated by him in a study of 121 subjects, opposite the upper border of the thyroid cartilage - he found quite a network of veins crossing from the median line of the neck to the internal jugular immediately over the point of ligation, and spreading from half an inch above down to the bifurcation of the common carotid. As it would have taken some time to apply a double ligature to each one of those veins, and as the author, on account of the bad general condition of the patient, desired to expedite matters as much as possible, he resorted to this expedient: by catching hold of the sheath of the common carotid and at the same time making gentle traction upon the lowermost of these veins with a blunt hook in an upward direction, he found that with his aneurism needle, armed with a good-sized catgut ligature, he could slip this instrument around the artery just in the crotch of bifurcation of the common into the external and internal carotids. Having every confidence in the healing power of arteries ligated under aseptic conditions, especially those tied with animal ligatures - in preference, catgut — the ligature was applied at this point, and immediately tightened. It was so close to the common trunk that it also occluded the superior thyroid branch, which is given off as a rule just at this point, and which he saw within the grasp of the ligature as he tightened it. The wound was immediately closed without drainage, and sealed by iodoformizedcollodion dressing. The operation on the jaw was completed with an insignificant loss of blood, and on the fifteenth day after the operation the patient left his private infirmary in New York City for his home in the western part of the State. There was no hemorrhage following this deligation.

About five years ago, in a similar operation, a ligature was applied at this point with equal success. The speaker did not relate these two cases for any bearing they may have upon the safety of ligation of the external carotid artery, since that question has been long settled. But the reason for narrating these two cases was to bring before the Association a consideration of the inflammatory changes which occur in arteries which have been ligated, and to discuss at length the best methods to pursue in these operations to secure the greatest safety to the patient.

the selection of a ligature. It seems to the author that in the animal ligatures, and especially in wellprepared and properly asepticized catgut is found the best ligature material. For the last ten years he had used catgut almost without exception, only once or twice using silk, and then in the ligation of the large venous trunk close to the root of the neck, in which he was fearful that the animal ligature might slip from the blood-pressure in the act of vomiting as the patients came out from under the influence of the anasthetic.

Porta, in four hundred experiments, found that in from one to two years, seventy per cent. of catgut ligature had been absorbed; thirty-six per cent. of silk, sixty-six per cent. of hemp and flax, and twenty per cent. of horse-hair. Order of rapidity; catgut, hemp, silk, horse-hair.

SIMULTANEOUS APPEARANCE OF CANCER IN BREAST AND UTERUS.

This paper was read by Dr. JAMES EVANS, of Florence, S. C. The subject of this interesting manifestation of the disease was a lady fifty-three years of age, married and the mother of six children. A striking peculiarity in the history of the case was, that when the disease was most active and destructive in the breast, it rather checked and retarded its tendency in this direction in the uterus.

Excision of the cervix and removal of the breast were proposed, but declined.

The author closed by saying that although there is a very general concensus of opinion among surgeons that the most successful treatment of cancer affecting the breast and uterus is early and radical removal by the knife, yet it is doubtful in the opinion of the author, if the operation is advisable when the disease appears in multiple form and in distant organs. When the disease is confined solely to the uterus and recognized at an early stage of its invasion, the prompt removal of the organ is usually followed by permanent recovery; in fact, recurrence less often takes place than removal from any other organ or part of the body.

DR. W. E. PARKER, of New Orleans, reported

SEVEN CASES OF VARICOCELE TREATED BY INCISION, LIGATION AND SHORTENING OF THE SCROTUM.

An incision, varying in length according to the size of the varicocele is made and the scrotum shortened by converting the wound from a longitudinal into a transverse one. All cases recovered with union by first intention are still doing well, the period since the first operation being seven months. The milder form of varicocele should be treated with a supensory bandage with proper attention to diet, exercise and bowels. A varicocele should be operated upon: (1) if it is of large size; (2) if it is painful; (3) if marked nervous symptoms are present; (4) if the testicle is atrophying; (5) if the varicocele is increasing rapidly; (6) if it is an obstacle to entering a public service; (7) if, on account of a patient's occupation a suspensory is troublesome, and he desires an operation.

Dr. Rufus B. Hall, of Cincinnati, Ohio, read a paper on

FIBROID TUMOR OF THE UTERUS WITH SUPPURATING OVARY DISCHARGING PER RECTUM.

As a preface to his report, Dr. Hall said the subject of operative treatment for fibroid tumor of the uterus, In tying arteries, an important point to consider is | was one in which the keenest interest was manifested by men engaged in abdominal surgery. The main points in the technique of the operation had been practically settled, but certain minor details in operative procedure were capable of improvement. Complications especially arose, which taxed to the utmost the skill of the operator.

The following case was reported in detail as illustrating a number of these complications. The patient, aged forty-four, was known to have a fibroid tumor for five years. She had suffered from sepsis for five weeks previous to the operation. In addition to the fibroid tumor was a large suppurating ovary holding about two pints of pus, which was discharged per rectum every eight or ten days. The suppurating ovary was densely adherent, and after its removal disclosed a large opening in the rectum. The operation included total extirpation of the fibroid uterus with the suppurating ovary, and the repair of the intestinal rent. There was no leakage of the injured bowel after the operation. The patient recovered.

The writer drew the following conclusions: The question of operation during sepsis is one that will admit of discussion both pro and con, but in the end it must be decided by the merits of the individual cases and not by rule. As to technique, total extirpation was given the preference as it gives the ideal condition both theoretically and practically for after-treatment. The Baer method was condemned as it does not give thorough drainage — a thing absolutely necessary where there are extensive raw surfaces which have been bathed in pus, and no peritoneum to close off the general peritoneal cavity. The strengthening of the suture line with a tag of adventitious tissue was advised. The packing of the pelvis with gauze to protect the cavity from intestinal leakage, should any occur, and to prevent intestinal adhesions, was recommended. The gauze is usually removed on the fourth day, and peroxide of hydrogen used as a wash for the cavity several times daily.

Again, forcible dilatation of the sphincter ani muscle to cause incontinence, thus relieving the intra-intestinal pressure from accumulating gases, the writer thinks, adds greatly to the chances of recovery. He first employed it for this purpose on February 6, 1893, in an operation for extra-uterine pregnancy with extensive bowel injury, the patient recovering. He is, as far as he knows, the first to practice forcible dilatation for this purpose.

DR. J. G. EARNEST, of Atlanta, Ga., contributed a short paper in which he reported

SOME COMPLICATED CASES OF PELVIC SURGERY.

Dr. Herbert M. Nash, of Norfork, Va., read a short paper on

THE REMOVAL OF AN INTRA-UTERINE FIBROID TU-MOR BY MORCELLEMENT WITHOUT HEMORRHAGE.

In September, 1892, he saw in consultation Mrs. A., aged about forty-two years, the subject of intractable hemorrhages from the uterus, lasting from two to three weeks of each month, and which had been habit-The uterus could be plainly ual for several years. felt above the pubes, and by the conjoined method, sound, etc., the diagnosis of intra-uterine fibroid was Not wishing at that time any radical procedure, she continued under the care of her physician, whose best efforts to control the hemorrhage proved fruitless. On the 11th of July, 1893, she entered the States is said to be 450 per day.

hospital for surgical treatment. On the 26th of August, the writer operated under ether. found quite impossible to dilate the os to the extent desired; but there was room enough for the manipulation without dividing the cervix, and no difficulty was found in seizing the presenting mass — the attachment of which to the uterine walls had been made out to be sessile - with a strong vulsellum. Upon making traction with some force, in order to determine the best method of procedure, the tissue gave way, and the withdrawn part of the detached mass was quite large, but no bleeding followed. This fact decided the doctor to proceed by morcellement, and with the forceps, scissors, and the instrument he exhibited, the whole growth was removed piecemeal, and with only a slightly colored serous discharge. The previous packing had been so effectual that the growth itself, and indeed the uterine walls, appeared to have been exsanguinated. The fragments removed, when under strong compression, presented a mass of fibroid tissue nearly as large as an ordinary cocoanut. patient left the hospital, the uterus had contracted firmly and measured a fraction over three and onehalf inches in depth, occupied its proper position in the pelvis, and the patient is to-day entirely well, with perfectly normal functions.

The following officers were elected: President, Dr. Louis McLane Tiffany, of Baltimore, Md.; First Vice-President, Dr. Ernest S. Lewis, of New Orleans, La.; Second Vice-President, Dr. Manning Simons, of Charleston, S. C.; Treasurer, Dr. Richard Douglas, of Nashville, Tenn.; Secretary, Dr. W. E. C. Davis, of Birmingham, Ala.

After introducing and adopting resolutions of thanks, the Association adjourned to meet in the City of Washington, D. C., the second Tuesday in November, 1895.

Recent Literature.

The Soldier's First Aid Handbook. Comprising a Series of Lectures to Members of the Hospital Corps and Company Bearers. By WILLIAM D. DIETZ, Captain and Assistant Surgeon, U. S. Army. Pp. 93. New York: John Wiley & Sons. 1893.

This little pocket book forms one of a series that is being published on military medicine and allied subjects. It is conveniently arranged, and is divided into the Organization and Duties of the Hospital Corps and Company Bearers, the Human Body, First Aid on the Battle-Field, and Management by the Bearer of Ordinary Accidents and Emergencies. It is interleaved, so that special notes may be made by the soldiers receiving instruction.

The instructions given in the text and the advice suggested to the men are thoroughly sensible. It will undoubtedly be a work of some value to the hospital corps and company bearers for whom it is intended. A few illustrations or diagrams could be added to another edition, and would be of great assistance in recalling to the reader the instructions which have been given him. It has a good index.

THE mortality from tuberculosis in the United

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ANNUS MEDICUS MDCCCXCIV.

The year 1894 has been especially distinguished by great activity and profound interest on the part of the medical profession, in serum therapy, particularly as applied to diphtheria. If, as its sponsors, men of honorable reputation and the highest authority in medical service, believe, a method for the cure of this disease, and for certain protection against its attacks has been found, the year 1894 may mark the beginning of a new era in medicine, that of the practical application of serum therapeutics. Whether the results so far reported will be sustained by further experience, the future will show. In the meantime, whilst there is every reason to encourage hopeful expectancy, judgment must be suspended, and the faithful trial of the treatment be continued.

The year has been marked by a gratifying advance in preventive medicine, namely, the check on cholera during the Meccan pilgrimage, and by an important discovery in bacteriology, that of the bacillus of bubonic plague by Kitasato.

The medical profession has sustained irreparable loss in the deaths of Holmes and von Helmholtz. The former closed, at the ripe age of eighty-five, a career which has left its mark both upon medicine and literature. The latter died at the age of seventy-three, having spent nearly his whole life in the fore-front of scientific thought, and solved the problem of the illumination of the interior of the eye, an achievement which of itself is enough of a monument to his memory.

EPIDEMICS.

CHOLERA. — The success of the precautionary measures taken by European countries after the severe cholera epidemic of 1892 was more pronounced during the past year even than in 1893.

During 1893 it will be remembered, that, although there was a serious outbreak in Mecca at the time of the annual pilgrimage, the quarantine at El Tor for returning pilgrims prevented its entry from this source ually, until in July it was declared epidemic.

into Europe, and even into Egypt. In 1894 the thorough preventive measures adopted at the International Sanitary Conference in February were so faithfully carried out, that even during the annual pilgrimage to Mecca, which closed early in July, not a single case of cholera occurred in the Hediaz: 49.600 pilgrims having disembarked in good sanitary condition. The success of the measures adopted by the conference for the care of such a large body of people marks an era in sanitary legislation. The precautions adopted and enforced, often under the most unfavorable circumstances, over enormous areas, were successful even beyond the most sanguine expectation, and prove beyond a doubt the effectiveness of sanitary measures thoroughly carried out, in the prevention of cholera epidemics.

The success of these measures removes the chief danger to Europe and the world from the invasion of cholera from the crowded cities and fairs of India, where the disease is constantly smouldering. measures included, in brief: (1) The disinfection and medical inspection of pilgrims before embarking from Indian ports, and their sanitary care during the voyage — the space to be allotted to each on board ship, the presence of physicians on board, etc.; (2) the reorganization of the Turkish lazarettos in the Red Sea. according to the principles laid down at the Venice and Dresden conferences with regard to doctors' space, medical officers, disinfecting stores, etc.; (3) the organization of a complete lazaretto at El Tor, through which the pilgrims from Tunis, Algeria and Bosnia must pass on their return from Mecca.

To this chief source of infection the attention of the International Conference was directed, and, as above described, with entirely successful results. source of danger — Russia — from which, except for the greatest care and vigilance on the part of Germany, Austria, England, and other European nations, the disease would have been epidemic in Europe, occupied the attention of Europe and America during 1894. In the cities of the Russian Empire, crowded with a population of uncleanly habits, and in the poorest sanitary condition, cholera was more or less prevalent all through the winter. During January and February the deaths from cholera in St. Petersburg averaged from 20 to 40 a week. It was prevalent in many Russian governments, and in Warsaw, Plock and Radom in Russian Poland. By March it had disappeared in St. Petersburg, but was still present in various parts of Russia and Russian Poland. During April it held its own in Warsaw and Russian Poland, and in May began to spread rapidly in Warsaw, Klovno, Poltz, Radom, Podolia and Kieff. In May the disease entered Prussian Silesia along the Russian frontier. rivers along the frontier became infected, in particular the Vistula; raftsmen and boatmen who drank the river water were the first to come down with the During May the disease also spread into disease. Austria-Hungary and Galicia, where it increased gradDuring the spring months a mild epidemic appeared in Constantinople, which diminished until in May the city was nearly free from the disease. This outbreak was followed, however, in June by a severe epidemic in the city of Sivas, which out of a population of 30,000 lost 600 from the disease between the 15th and the 26th of May. The disease was also rather prevalent in Tokat, Samsoun and other provinces.

During the spring an epidemic of diarrheal disease prevailed at Lisbon; there were, however, but few fatal cases. The disease was at one time reported to be true Asiatic cholera, but the Portuguese health authorities stoutly claimed, as a result of bacteriological investigation, that such was not the case. In the end their assertions proved to be true, and at no time was there any restriction of trade with Portugal.

In Belgium as well as Russia, cholera was more or less prevalent during the winter; particularly at St. Trond—an old town, whose water supply is derived from wells dug in soil contaminated for centuries, and where "prehistoric drains empty into a brook which traverses the town,"—there was quite a severe epidemic. There were from 12 to 20 cases at Liége and Namur.

During May there were a few scattered cases along the Belgian frontier of France, at Finisterre and Morbihan. Up to the end of June, however, the epidemic was practically confined to Austria-Hungary and Russia.

Early in July, the disease began to spread rapidly in Russia, and reappeared in St. Petersburg. There the epidemic became very severe, and about 200 cases were reported each week. Several cases were reported in Prussian Silesia, mostly occurring in raftsmen along the Vistula, from the point of its entry into Germany to its mouth at Danzig. Isolated cases imported from St. Petersburg were reported from Berlin and Bremen. In Sweden cases of cholera occurred in July at the quarantine station at Fejan amongst persons on board a ship from St. Petersburg.

In August the epidemic at St. Petersburg, which had somewhat diminished during the middle of July, became very serious and menacing. The new cases numbered over 200 every day, while there were from 50 to 80 deaths. There were 500 cases in the hospital at one time. Many cases occurred at Cronstadt and at Warsaw, while the provinces each reported a few cases, but no especial increase in the outbreak. The scattered cases in Belgium, the Hague and Brittany were not followed by any epidemic. Four cases occurred on the ship Balmore, from St. Petersburg for London, which was detained off Gravesend on August 17th. Ten districts in Eastern Galicia, in the basins of the Dneister and Pruth, were declared infected. It will be remembered that this district formed the cholera centre of last year.

Germany, which was at this time in constant danger from the infected Vistula, now was threatened from the opposite direction, two cases occurring at Cologne. These cases, however, occurred in sailors who came up the Rhine from Holland, and were promptly iso-

lated and disinfected, so that no spread of the disease resulted.

During August the disease at St. Petersburg declined somewhat, but steadily increased in the provinces outside St. Petersburg; so that, in consequence, the Russian army manœuvres were prevented. It gained also in Prussian Silesia. Two hundred cases daily were reported from Galicia with a mortality exceeding 50 per cent. Sixty cases appeared during one week in Nijni-Novgorod.

In Germany several cases occurred along the basin of the Vistula, but prompt sanitary measures taken by the government prevented the spread of the disease; travellers were allowed to cross the frontier only at certain points, and after a careful medical examination.

In Holland a slight spread of the disease was noted, several cases daily being reported, and a severe outbreak occurred at Liége, Belgium.

In France, Marseilles was under suspicion, though the existence of the disease was strenuously denied by the authorities.

In September a recrudescence took place in Galicia, Northeast Germany and Holland, which was greater than could have been expected,, and in excess of that which obtained last year. In Austria-Hungary in the week August 27th to September 3d, there were 801 deaths from cholera in Galicia and Bukowina. Since it became epidemic there had been 6,958 cases of cholera, and 3,000 deaths in those provinces. During this month the disease ceased to spread in East Prussia, owing no doubt to the vigilance of the German sanitary authorities. In Germany also there was a slight outbreak among squalid laborers at Bürgeln, a small village near Marburg. Isolation and disinfection were promptly carried out under the direction of Professor Fränkel, of Marburg, resulting in the immediate suppression of the outbreak. In the Russian provinces the disease was at its height. In one week there were 8,815 cases, with 4,329 deaths.

In October the epidemic slowly decreased in St. Petersburg, and very few cases were reported in Germany, but the disease still raged in Galicia and Bukowina. An outbreak occurred in Broussa in Asia Minor, and a few cases were reported from Constantinople and various Turkish provinces. In the Netherlands the disease markedly declined.

During November the disease was still moderately prevalent in Russia, Turkey and Asia Minor; and there is no reason to expect that it will not, as in former years, be more or less prevalent through the winter.

In India the disease prevailed more or less during the summer, but there has been no extensive epidemic.

England profited by the severe lesson taught by the epidemic at Hull and Grimsby during the previous year, and by constant watchfulness cholera was kept out of the United Kingdom.

The sanitary regulations enforced by our own government during the previous year, and the work of

our sanitary inspectors at European ports, was so effective that not a single case reached quarantine on this side of the Atlantic. This fact, and the successful manner in which the German and English authorities dealt with the disease, is an additional demonstration of the immense value of modern scientific preventive medicine, and at the same time a demonstration of the fact that constant watchfulness is the price of immunity.

SMALL-Pox, which at the close of last year was prevalent and widespread in this country, has continued through the year to a greater or less extent; a diminution along the Atlantic seaboard in the spring was attended by a marked increase in various Western and Southern States during the year, notably a considerable epidemic in Chicago, and later in Milwau-At the beginning of the year there were 89 cases reported in New York City, between the 1st and 29th of January, and 128 cases in Chicago. During February, March and April the disease steadily increased in Chicago. During April there were 544 cases there. The authorities were ultimately active in combating the disease, but were forced to employ the assistance of the police in ferreting out cases concealed in tenement-houses by an ignorant population, hostile to vaccination. Although regular inspections of the vessels in the harbor were made in order to prevent the spread of the disease to the ports along the great lakes, it was carried to Green Bay, Marquette, and other places in Michigan and Wisconsin, and spread rather widely through these States.

In New York the disease diminished somewhat during the winter, but increased in Brooklyn, although in April it began to show the effect of general vaccination by diminishing in intensity. Through the winter it was prevalent through Pennsylvania.

A small-pox centre developed in Nashville, Tenn., and in April another in Texarcana, Ark. In May the epidemic in Chicago reached its height, 164 cases being reported during the first week. During the spring the disease was reported in every State east of the Mississippi, and in Connecticut, Rhode Island and Maine. In Boston small-pox died out during May, its decrease no doubt being due to the measures instituted by the board of health of free vaccination, and examination of all suspicious cases by the officers of the board. Sporadic cases were reported from various towns in Massachusetts all winter.

During the summer small-pox broke out in Milwaukee, and rapidly increased, owing to the resistance of the populace to compulsory vaccination and isolation of patients. Mobs were at one time temporarily successful in preventing the conveyance of patients to the small-pox hospitals. Up to September 29th there had been 318 cases and 24 deaths in Milwaukee. In October it nearly died out in Chicago, but in November began to increase again in both cities and spread by the railways to contiguous towns. In October there was a slight outbreak in Washington, D. C.

The disease has been unusually prevalent in London during the year, and in fact throughout England and southern Scotland, particularly Edinburgh, Leith, and Glasgow. During July there was an epidemic in St. John's Wood, London, 135 cases being reported; and in September there were from 129 to 179 cases under treatment in London.

On the Continent it has been nowhere epidemic, though sporadic cases have occurred in many large cities. On this side of the Atlantic there have been epidemics in Rio Janeiro, Havana, and Mexico.

THE PLAGUE IN CHINA.— An epidemic of bubonic plague appeared in April at Canton, and spread with frightful rapidity among the poorer classes, until the deaths numbered many thousands. In May it spread to Hong Kong, where it raged for two or three months, the port being officially declared free from the disease on September 30th.

It is recorded that in the fourteenth century the plague raged both in Europe and Asia. Since then it has prevailed in various parts to a limited extent, with gradually decreasing virulence, notably in Asiatic Turkey and on the borders of the Caspian, but during all this time it was endemic in China, and made its appearance on a limited scale year after year in the southern part of the country. In the epidemic at Hong Kong seventy-five to eighty per cent. of those infected died. The principal symptoms were as follows: After an incubation period varying from three to five days, and in some cases even to eight days, high fever appears, with swelling of the lymphatic glands, generally first in the femoral lymphatics, and subsequently spreading to those of the groin, armpits and neck. The tongue becomes covered with a whitish-gray or blackish fur, and the patient suffers, also, from severe headache, accompanied by delirium, and, in severe cases, vomiting and diarrhea. The third and fourth days are the most fatal. In cases which recover, the temperature drops gradually after about a week. The glands suppurate often persistently. The disease affects young and old of both sexes. With few exceptions the patients were Chinese, especially those living in the more filthy quarters.

The unspeakable filth of the poorer quarters of the Chinese cities had been much increased by the long drouth. For nearly seven months there had been no rain to speak of, but only a few light showers. The long time without serious epidemic had made the supervision of sanitary conditions lax, and the uncleanliness of the poorer quarters polluted the air for considerable distances. A general cleaning out was at once ordered at Hong Kong, but the water-supply was too scanty to allow of thorough cleansing.

Some idea of what a cleaning up in a Chinese city means may be had from the Report of the Sanitary Board concerning the first general cleaning out some years ago. This report says, that during the eight days on which special facilities were offered for the work, no less than 2,400 tons of rubbish were removed in excess of the normal quantity, which was stated to

be 100 tons a day. Of late years there has been no such accumulation; but the drainage is still notoriously defective, and the amount of surface and concealed filth is sufficiently large.

The cleaning and disinfecting at Hong Kong was begun too late, however, for the plague had already appeared, and some twenty cases were at that time in the Tung Wah Hospital. The early deaths were reported as due to fever; and it was only when several had occurred in quick succession that the true nature of the disease at Hong Kong was realized. At first, it was hoped to keep the disease down; but the upturning of dirt appeared to favor its spread, until even the better portions of the city and the foreign inhabitants were attacked. The mortality in Canton at first was 80 per cent., falling for a while to 30 per cent., but soon rising to 55 or 60 per cent., where it remained until the end of May.

This epidemic furnished the opportunity to Professor Kitasato, who was employed by the Japanese Government to investigate the disease, to make the brilliant discovery of the cause of the plague, namely, the specific bacillus of the plague, a discovery of much scientific importance.

DIPHTHERIA.— Throughout the year diphtheria has been unusually prevalent in this country and in England. In the State of New York, for instance, from January 1st to the 24th there were 767 cases, as against 382 in the same period in 1893. In the City of New York the deaths from diphtheria during the winter and spring averaged from 40 to 50 a week, falling during the summer to between 25 and 30, but rising again in the autumn to about 40. In London the weekly deaths during the winter were between 70 and 80, falling to about 50 in the summer, and rising to between 80 and 90 during the autumn.

In Boston the number of cases reported each week during the winter months varied from 25 to 50 cases, falling during the summer to from 20 to 40, but rising rapidly during November, until in the week ending November 22d, 147 cases were reported. Since then there has been a slight decrease.

December reports from all parts of the country, except the South Atlantic area, indicate a wider diffusion of diphtheria than has ever been recorded in the United States. The mortality does not seem to be unusual, with occasional exceptions, and, in the absence of any general system of compulsory notification of the contagious diseases, the number of cases can only be inferred from the death returns, from the indications of popular alarm in the closing of schools, the enforcement of quarantine, etc., and from the overcrowded condition of the isolation hospitals. In Boston all through the autumn the diphtheria wards at the City Hospital have been overcrowded, and many cases have been refused admission. In London during the same period the hospitals of the Metropolitan Asylums Board have been taxed to the utmost, and many patients have been refused.

YELLOW FEVER. - During the early months of the vear vellow fever was epidemic at Rio de Janiero. The number of cases and deaths steadily increased from January to March; the largest number of deaths in any one day were 102 on March 2d. During the week ending March 10th, there were 589 deaths from the disease. Many cases occurred among the crews of the merchant marine in the harbor, and several masters of American vessels died of the disease. The civil war, with the long-continued blockade of the harbor by the rebel fleet, and the numerous bombardments, made the disinfection of vessels departing for American ports impracticable. The condition of the port was stated in the bills of health, and it was recommended that especial care be taken in inspection and disinfection at American quarantine stations. No case of yellow fever escaped quarantine at South Atlantic Ports, although vessels arrived from Havana and Rio at Baltimore, Key West and Cape Charles quarantine stations with cases on board. The moderate epidemic at Cuba during the summer was fully as great a source of danger to this country as the more severe epidemic at Rio. Between April 29th and May 5th yellow fever was reported at Rio, Cuba, Ecuador, Honduras, Vera Cruz, Antigua, Puerto Rico and Yucatan.

TYPHUS FEVER was reported from Russia, Poland, Austria, Germany and other European countries. The only serious epidemic occurred at Prague, where the disease broke out in January, and did not subside until May. At Cairo and Alexandria, there were numerous cases in June. New York City escaped this year, although on May 4th three cases occurred in Philadelphia, which were said to have been imported from New York.

INFLUENZA.— There has been no pandemic of influenza this year. The disease prevailed to a moderate extent during the winter in Germany, England and Italy. Early in the year it was epidemic in Copenhagen and Moscow. In this country influenza was prevalent throughout New York State during the winter, and scattered visitations were reported from different cities in New England.

DENGUE. — An epidemic of "dengue fever" occurred at Key West during July. The troops in garrison there were first affected, and about eighty men suffered out of a total troop of one hundred and fifteen. There were also many cases among the residents of the city, a total of over seventy-five cases being reported to the Board of Health. There were no deaths, and the disease was of a mild type.

QUABANTINE.

The work of the sanitary inspectors of our government who were stationed in foreign ports was so effective during the year, that, as before noted, not a single case of cholera reached quarantine on this side of the water. The quarantine stations, especially in the

South Atlantic, were, however, effective in keeping out yellow fever and small-pox coming from Brazil and Havana, where, owing to lack of proper facilities, proper inspection and disinfection were impossible.

MEDICAL LEGISLATION.

Medical Legislation will be considered as a separate topic in a subsequent issue.

MISCELLANY.

SERUM THERAPY IN DIPHTHERIA. - The year just passed has been marked by the extended application of serum therapy to the treatment of that most widespread, deadly and treacherous disease, diphtheria. This step in the development of therapeutics, - the practical application of our knowledge of immunity to this disease — is due to modern bacteriology. Jenner's application of the principle of immunity must not be forgotten in this connection, as it marks the starting-point and suggestion of serum therapeutics. Pasteur's work on anthrax and chicken cholera, marks the first step in preventive therapeutics on the basis of immunity in animals by inoculation with serum from other animals rendered immune by passing through the disease. Koch's treatment of tuberculosis was an attempt to produce an immunity by the action of the toxines resulting from the growth of tubercle bacilli. Pasteur's inoculation with attenuated virus for the production of immunity against rabies, was another important step forward in the application of a principle closely allied to the serum therapeusis.

Kitasato, Behring and their fellow workers showed that inoculation of serum from an immunized animal was capable, not only of producing immunity from the same infection in other animals, but of aborting an attack already in progress. In 1890 this principle was proved by Behring and Kitasato to hold true in tetanus. Löffler first rendered an animal immune to the virus of dipththeria. Behring, Fränkel, Ehelich, Brieger and Kitasato, have been for years steadily at work, studying all possible methods of cultivation of the diphtheria bacillus, with a view to the therapeutic application in man of the principle of immunity in this disease, and early in the present year had attained a sufficiently definite knowledge of the action of the diphtheria antitoxin produced by the bacillus in the blood serum of animals, to justify its trial in the human subject.

Roux and his assistants, Martin and Challon, had been at work upon the application of Behring's great principle at the Pasteur Institute at Paris, and at about the same time began the treatment of diphtheria with antitoxin at the Hôpital des Enfants Malades in Paris. Early in the autumn the reports on the antitoxin treatment of diphtheria began to attract widespread attention. The duty of the medical profession to carefully test any remedy offering even the slightest promise of lessening the mortality of the disease began to receive recognition. The trial of the treatment has been only limited by the supply of the serum, which even in Germany and France has been entirely unequal to the demand. The profession in this country and the boards of health have been conservative in committing themselves. Of late the preparation of the serum has been begun by the boards of health in Boston, New York and other large cities, but a supply sufficient for general use will not be ready for some months to come.

A brief résumé of the statistics published during the year upon the use of the remedy may be of inter-Katz has reported from the Friedreich's Hospital, Berlin, 128 cases, with a mortality of 13.2 per cent. For the three years, 1890 to 1893 inclusive, there were treated at the same hospital 1,081 cases, with a mortality of 38.9 per cent. Behring and Kossel report 30 cases, with a mortality of twenty per cent.; Ehrlich, Kossel and Wasserman 67 cases with tracheotomy, mortality 44.9 per cent., and 153 cases without tracheotomy, mortality 23.6 per cent.; Aronson 192 cases, mortality 13 per cent.; Roux 448 cases, mortality, 24.33 per cent.; Weilger 63 cases, mortality 28 per cent. In the British Medical Journal there have been reported 39 cases treated by various practitioners, mortality 7.6 per cent. Bokai, of Budapest, reports 35 cases, mortality 14.33 per cent., the average mortality for the last three years being 53.8 per cent. Börger has lately reported from Greifswald 30 cases, mortality 7 per cent. Kuntz reports 25 cases from Oschersleben, mortality 12 per cent.

In this country Welch has reported 4 cases treated at the Municipal Hospital, Philadelphia, with 1 death, mortality 25 per cent.; White, of New York, 20 cases, mortality, 25 per cent.; Williams, of Boston, 6 cases, mortality 17 per cent; Körte, from the Hospital in Urban, reports 121 cases, mortality 33 per cent.; 106 cases were treated without antitoxin during the same period, mortality 45 per cent.; 37 mild or moderately severe cases, where the treatment was begun before the third day, gave a mortality of 3.3 per cent.

The sum of the cases quoted above is a total of 1,369 cases, with an average mortality of about 25 per cent. This average includes cases treated in various European countries and in America, under the most varying conditions. In addition to the above, 281 cases have just been reported which were treated at the Trousseau Hospital in Paris during October and November, with a mortality of 14.71 per cent.

A study of the reports, both from hospital and private practice, show the importance of beginning treatment early, before septic or other complications have arisen; and both private and hospital statistics are marred by the fact that many of the cases are admitted at late stages of disease. The marked variations in the severity of diphtheria epidemics makes it necessary for the present to suspend final judgment; but enough has been accomplished to make it the imperative duty of the profession to give the serum a fair trial.

If the statement of Behring be true, a specific treatment of diphtheria and tetanus has been found. He even expresses the hope that in a short time tuberculosis and pneumonia may be added to the list. The possibility of extending serum therapeutics to other forms of acute, or even chronic disease, offers a field for enthusiastic work of almost boundless extent; and if the hopes of its advocates be realized, for the actual accomplishment by scientific medicine of almost inestimable benefits to humanity.

THE BACILLUS OF PLAGUE. — In June of the past year the Japanese Government sent a commission to study the bacteriological, clinical and pathological features of the plague. Kitasato, who had charge of the bacteriological department, found numerous bacilli in the swollen glands, and also in the blood of the various

organs. This bacillus was not found in any other infectious disease, was susceptible of pure culture, and in animals produced the same symptoms which the plague produced in human beings. From this evidence it was concluded that the bacillus discovered by Kitasato was the cause of the bubonic plague, and that the plague was an infectious disease produced by a specific bacillus.

Haffkine has further prosecuted his work in India upon the inoculation against cholera. The results, particularly in a recent trial during an epidemic in the Gaya jail, are more favorable than any he had hitherto been able to reach; 1,200 cases, including 500 British soldiers, were inoculated at Lucknow, and over 1,200 in Calcutta. Some striking observations of the escape of inoculated persons in families where the non-inoculated fell ill with the disease are reported.

The work of the International Cholera Conference held in Paris in February, has been briefly outlined in the account of the cholera epidemic of the year. Great Britain, France, India, Austria-Hungary, Italy, Greece, Portugal, Sweden, Norway, Turkey, Persia, Egypt, the Netherlands and the United States were represented.

The year has not been free from disasters, the most severe of which were the extensive floods in Persia in the spring, and in British Columbia in June. The area under water about Vancouver was estimated at between 150,000 and 200,000 acres, and the loss of life was great. In April, Greece was visited by severe earthquakes, by which 250 people were killed and thousands rendered homeless.

The Eighth International Congress for Hygiene and Demography met at Budapest from September 1st to September 9th. It was largely attended, there being about 600 in the section for hygiene, and about 200 in the section for demography. Among the number were many English and Americans. Of special interest in the general discussion was the question of the sanitary condition of the great cities of the world and a comparison of mortality-rates. In Budapest, in 1893, the mortality-rate per 1,000 was but 14.459; whereas, in 1874, it was 40 per 1,000.

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The Congress was opened on the 1st by the Archduke Karl Ludwig, the representative of the emperor; then followed immediately an act of world-wide interest, the formal homage to one of the greatest sanitarians, Ignatius Phillipus Semmelweis. The whole Congress in a body assisted at the unveiling of a monument over his grave, and Dr. Ferdinand Hüppe delivered an oration on the life of Semmelweis, and his efforts to establish the fact that puerperal fever was caused by lack of attention to cleanliness and antisepsis on the part of the attendants.

During the Congress an enormous amount of ground in public hygiene, epidemeiology and demography was gone over. The most important communication to the Congress was Dr. Roux's report on the serum therapy of diphtheria. The Congress closed in a vain and somewhat ludicrous attempt to pass a set of resolutions, which, owing to the polyglot nature of the assemblage, the majority of the members could not understand. Madrid was selected as the place of meeting for the next Congress.

MEDICAL CONGRESSES AND MEETINGS.

The Eleventh International Medical Congress was formally opened at Rome on Thursday, March 29th, in the presence of the King and Queen of Italy and the officers of the Court, and came to a close April 5th. Professor Baccelli delivered his inaugural address in Latin to an audience of six thousand persons. Prince Ruspoli, the Syndic of Rome, extended to the members the welcome and hospitality of the city. The work of the Congress, which was divided into six sections, was somewhat hampered by the difficulty of properly organizing so enormous a body of men - there were between 6,000 and 7,000 members - and enjoyment of the receptions and fêtes was somewhat marred by the same circumstance. As to the sections, the number was enormous, and the organization of some of them so defective that it has been impossible to publish a full account of their proceedings. Addresses were made by Babes, Bizzozero, Bouchard, Danilewski, Michael Foster, Abram Jacobi, Laache, Nothnagel, Stokvis and Virchow. The next meeting of the Congress will be held in St. Petersburg, in 1896.

The Third Trieunial Congress of American Physicians and Surgeons was held in Washington, May 29th to June 1st, and at the same date and place the following other societies, making up the Congress, met: Association of American Physicians, American Ophthalmological Society, American Otological Society, American Neurological Association, American Gynecological Society, American Dermatological Association, American Laryngological Association, American Surgical Association, American Association, American Association, American Orthopedic Association, American Physiological Society, Association of American Anatomists, American Pediatric Society.

The Association of Military Surgeons of the United States met in Washington, D. C., May 1st; the American Medico Psychological Association, in Philadelphia, May 17th; the Twenty-first National Conference of Charities and Correction, in Nashville, Tenn., May 23d; the Forty-fifth Annual Meeting of the American Medical Association was held in San Francisco June 7th to 11th; the Massachusetts Medical Society, in Boston, June 13th; the American Academy of Medicine, in Jefferson, N. H., August 29th; the American Public Health Association, in Montreal, Canada, September 25th; the American Association of Obstetricians and Gynecologists, in Toronto, Ontario, September 19th; the Southern Surgical and Gynecological Association in Charleston, S. C., November 13th; the first meeting of the American Academy of Railway Surgeons was held in Chicago, Ill., November 9th; the American Electro-Therapeutic Association held its fourth annual meeting in New York, September 25th.

The sixty-second annual meeting of the British Medical Association was held in Bristol, July 31st; the twenty-third Congress of the Association of German Surgeons was held in Berlin, April 12th; the French Congress of Otology and Laryngology was held in Paris, April 30th; the fifth Congress of French Alienists and Neurologists in Clermout Ferrand, August 6th; the International Congress of Ophthalmology in Edinburgh in August. The eighth French Surgical Congress met in Lyons, October 9th; the first French Congress of Internal Medicine met in the

same city, October 25th; the Association of German Naturalists and Physicians met at Vienna, September 24th; the German Society for Public Health met at Magdeburg in September; the first Indian Medical Congress in Calcutta, December 24th.

LECTURES.

In connection with established lectureships in the United States and Great Britain, the following lectures and orations were delivered:

The Cartwright Lectures, at the New York Academy of Medicine, "On Digestive Proteolysis; or, New Facts in the Chemistry of Digestion," by Russell H. Chittenden, Ph.D.; the Shattuck Lecture before the Massachusetts Medical Society, by Thomas Dwight, M.D., LL.D., on "The Range and the Significance of Variations in the Human Skeleton." In Great Britain, the Croonian Lectures, on "A New Departure in Diabetes," by F. W. Pavy, M.D., F.R.S., F.R.C.P.; the Lettsomian Lectures on "Peritonitis," by Frederick Treves, F.R.C.S.; the Morton Lectures on "Cancer and Cancerous Diseases," by Samuel G. Shattock, F.R.C.S. the Harveian Oration, on "Modern Developments of Harvey's Work," by T. Lauder Brunton, M.D., D.Sc., Edin., LL.D., Hon., Aberdeen, F.R.S., F.R.C.P.; the Bradshaw Lectures, on "Infantile Scurvy, and its Relation to Rickets," by Thomas Barlow, M.D., F.R.C.P.; the Arris and Gale Lecture, on "The Physiology of Lymph Formation," by E. H. Starling, M.D., M.R.C.P.; the Hunterian Lecture on "Rational Therapeutics," by Philip H. Pye-Smith, M.D., F.R.C.P., F.R.S.; the Milroy Lectures on "Darwinism, and Race Progress," by John B. Haycraft, M.D., F.R.S.E.; the Lumleian Lectures, on "Heart Inflammation in Children," by Octavius Sturges, M.D., Cantab., F.R.C.P.; the Goulstonian Lectures, on "The Physics of the Circulation," by Paul M. Chapman, M.D., Lond., F.R.C.P.; the Ingleby Lectures, on "The Common Forms of Dyspepsia in Women," by Robert Saundby, M.D., Ed., F.R.C.P., Lond.; the Hunterian Oration, on "Aspects of Medical Life: John Hunter — Andrew Clark," by J. Dundas Grant, M.D.; the Morrison Lectures, on "Insanity," by J. Batty Tuke, M.D., F.R.C.P., Ed.; the Cavendish Lecture, on "Some Points in the Treatment of Typhoid Fever," by Sir William Broadbent, Bart., M.D., F.R.C.P.

NECROLOGY .- FOREIGN.

Jules Arnold, M.D., professor of hygiene in the Faculty of Medicine at Lille, died in April, aged sixty-three.

Pierre J. Van Beneden, M.D., D.Sc., LL.D., professor in the Faculty of Sciences at Louvain, died in Louvain, November 9, 1893, aged eighty-four.

Theodor Billroth, M.D., professor of surgery in the University of Vienna, died at Abbazia, February 6, aged sixty-four.

Giuseppe Dagna, M.D., dean emeritus of the Medical Faculty of the University of Pavia, died February 3.

Paul Diday, M.D., one of the leading surgeons of France and a founder of the *Lyon Médicale*, died in Lyons, January 8, aged sixty-three.

George Edward Fenwick, M.D., of Montreal, professor emeritus of surgery in McGill University and surgeon to the Montreal General Hospital, died June 26, aged sixty-nine.

Prof. Oscar Fræntzel, M.D., of Berlin, author of August 3, aged sixty years.

well-known works on diseases of the heart and lungs, died in Berlin, May 18, aged fifty-six.

Dr. S. Guttmann, of Berlin, the editor of Deutsche Medicinische Wochenschrift, died December 22.

Adolph Hannover, M.D., at one time professor of medicine at the University of Copenhagen, died July 7, aged eighty.

Herman Louis Ferdinand Helmholtz, M.D., professor of physiology in Berlin, died in Berlin, September 8, aged seventy-three.

Surgeon-Colonel Archibald Hamilton Hilson, M.D., C.I.E., late Inspector-General of Civil Hospitals, Bengal, and a hero of the Sepoy Revolt of 1857, died January 4, aged fifty-nine.

August Hirsch, M.D., professor of special pathology and therapeutics and of the history of medicine in the University of Berlin, died January 28, aged seventy-seven.

Joseph Hyrtl, professor of anatomy in the University of Vienna, died in Vienna, July 19, aged eighty-three.

Ernest Henry Jacob, M.D., professor of pathology in Yorkshire College, died in Leeds, February 28, aged forty-four.

Professor Lemcke, M.D., director of the Polyclinic for Diseases of the Nose and Throat at Rostock, died September 13, aged eighty-four.

William J. Little, M.D., F.R.C.P. (Lond.), M.R.C.S. (Eng.), founder of the Royal Orthopedic Hospital of London, died in West Malling, Kent, England, July 7, aged eighty-three.

Albert Lücke, M.D., professor of surgery in the

University of Strasburg, died February 28.

Auguste Ollivier, M.D., physician to the Enfants Malades, and other hospitals of Paris, died in March, aged sixty-one.

Beaven Nevie Rake, M.D., Lond., L.R.C.P., M.R.C.S., superintendent of the Trinidad Leper Asylum, died at Port of Spain, Trinidad, August 24, aged thirty-six.

Dr. Rollett, professor of hygiene at Lyons, died

August 2, aged sixty-nine.

Geo. J. Romanes, M.D., professor of physiology in the Royal Institution of London, died in London, May 23, aged thirty-six.

Francisco Alonzo Rubio, M.D., professor of obstetric medicine in the University of Madrid, died in February.

Gustav Schenthauer, M.D., professor of pathological anatomy in University of Pesth, died January 28.

Carl Schmidt, M.D., professor of chemistry in the University at Dorpat, died February 27, aged seventy-two.

Octavius Sturges, M.D., F.R.C.P., senior physician to Westminster Hospital, London, died November 3, aged sixty-one.

Leon Warnots, M.D., professor of operative surgery in the University of Brussels, died in September, aged

thirty-eight.

Joseph Workman, M.D., for a quarter of a century superintendent of the Toronto Asylum for the Insane, and the first president of the Ontario Medical Council, died on April 15 in Toronto, Ont., aged eighty-nine.

NECROLOGY -- UNITED STATES.

Judson B. Andrews, M.D., superintendent of the State Hospital for the Insane at Buffalo, N. Y., died August 3, aged sixty years.

William G. Austin, M.D., at one time superintendent of the Charity Hospital in New Orleans, died in New Orleans, June 12, aged eighty.

Reuben D. Clarke, M.D., State chemist of the State of New York, died August 11, aged forty-seven.

William C. Dabney, professor of obstetrics and medicine at the University of Virginia, died at Charlotteville, August 20, aged forty-five.

Elijah S. Elder, M.D., president-elect of the Indiana State Medical Society, and Dean of the Med-

ical College of Indiana, died in Indianapolis, May 19,

aged fifty-three. William Goodell, M.D., professor emeritus of the diseases of women and children in the University of Pennsylvania, died in Philadelphia, October 27, aged sixty-five.

Charles Pinckney Gage, M.D., at one time president of the New Hampshire Medical Society, died in Concord N. H., November 26, aged eighty-three.

Arthur Hill Hassall M.D., originator of the Ventnor system for the hospital control of phthisis, died in

San Remo, April 10, aged seventy-seven.

B. F. Helper, M.D., at one time president of the Kansas State Medical Society, and editor of the Kansas Medical Journal, died at Fort Scott, Kansas, November 22.

Hampton E. Hill, M.D., at one time demonstrator of anatomy in the Bowdoin Medical School, died at

Saco, Me., January 9, aged forty-three.

William V. Keating, M.D., at one time professor of obstetrics in Jefferson Medical College, and medical director of several hospitals, died in Philadelphia, April 18, aged seventy-one.

James Kitchen, M.D., for many years a prominent physician in Philadelphia, died August 19, aged ninety-

Philip Lansdale, M.D., medical inspector of the United States Navy, died in Philadelphia, August 21, aged seventy-seven.

Theodore Metcalf, one of the founders of the American Pharmaceutical Association, died in Boston,

April 26, aged eighty-two.

A. B. Miles, M.D., professor of surgery in Tulane University, New Orleans, died August 5, aged forty-

Joseph Pagani, M.D., member of the Academy of Medicine of Paris, and the Societa Medicale di Roma,

died in Boston, July 15, aged fifty-eight.

John H. Rauch, M.D., president and secretary of the State Board of Health of Illinois, from its organization to 1891, and during the war assistant medical director of the Army of the Potomac, and medical director of the Gulf Department of the Nineteenth Army Corps, died March 24.

Hanbury Smith, M.D., of New York, who was for some time superintendent of the Ohio State Lunatic Asylum, died in New York, September 13, aged

eighty-four.

William W. Reese, M.D., at one time president of the Kings County Medical Society, died in Brooklyn, N. Y., October 20, aged eighty-two.

NECROLOGY. - MASSACHUSETTS MEDICAL SOCIETY.

Frank Marcellus Blodgett, M.D., of New York, N. Y., died September 26, aged fifty-eight.

Gerritt James Bradt, M.D., of Lowell, died July 1, aged forty-five.

Benjamin Storer Codman, M.D., died February 22, aged seventy-eight.

Albert Day, M.D., of Melrose Highlands, died

April 26, aged seventy-four. Samuel Magner Donovan, M.D., of Quincy, died February 19, aged forty-two.

George Washington Davis, M.D., of Holyoke, died September 18, aged forty-seven.

Urbane Hallock Flagg, M.D., of Mittineague, died November 28.

William Gordon Fogg, M.D., of Boston, died Feb-

ruary 27, aged forty-three.

Francis Flint Forsaith, M.D., of Providence, R. I., formerly of Weymouth, died March 10, aged sixty-

George Torrey Grierson, M.D., of Lowell, died January 28, aged twenty-five.

Albinus Otis Hamilton, M.D., of Dorchester, died October 4, aged sixty-two.

Maurice King Hartnett, M.D., of Boston, died May 14, aged seventy.

Alexander Reed Holmes, M.D., of Canton, died November 11, aged sixty-eight.

Oliver Wendell Holmes, M.D., of Boston, died

October 7, aged eighty-five.

David Thompson Huckins, M.D., of Watertown, died July 21, aged seventy-four.

George Jewett, M.D., of Fitchburg, died December 16, aged sixty-nine.

Joseph Manning, M.D., of Rockport, died December 10, aged seventy.

John H. Patterson, M.D., of Harwich, died April 29, aged eighty-two.

Charles Colby Pike, M.D., of Peabody, died January 27, aged forty-nine.

Joel Seaverns, M.D., of Roxbury, died March 1, aged sixty-five.

Henry S. B. Smith, M.D., died in Middleboro, October 80, aged fifty-five.

George James Townsend, M.D., of South Natick, died December 9, aged seventy-one.

James Edwin Walker, M.D., of Brookline, died June 15, aged sixty-two.

Barion Crowell Watson, M.D., of Scituate, died October 30, aged seventy.

Frank Stowell Whittemore, M.D., of Boston, died in New York City, November 24, aged thirty.

Oliver Augustus Willard, M.D., of Lowell, died January 7, aged thirty-eight.

Since the last report twenty-six members of the Society have died, thirteen less than in the preceding The average age was sixty and one-tenth, that of last year being sixty and four-tenths. Two had reached the age of eighty years. Seven were seventy years or over. There were only three deaths under forty.

SOCIETY NOTICES.

NORFOLK DISTRICT MEDICAL SOCIETY. — The next meeting will be held at the house of Dr. Wm. P. Bolles, 466 Warren Street, Roxbury, on Friday, December 28th, at 8 p. m.

Communications: "Dental Topics of Interest to the Physician," H. W. Adams, M.D., D.D.S.
"Observations on Oral Surgery," W. P. Bolles, M.D.
"A Case of Aneurism of the Aorta, with Specimen," S. M. Crawford, M.D.

J. C. D. PIGEON, M.D., Secretary.

THE SUFFOLK DISTRICT MEDICAL SOCIETY, SUBGICAL SEC-TION. - The Surgical Section of the Suffolk District Medical Society will meet on Wednesday evening, January 2, 1895, at

Society will meet on Wednesday evening, January 2, 1886, at 8 o'clock, at 19 Boylston Place.
Dr. M. H. Richardson will report, "A Case of Gastrostomy by Witzel's Method." "A Case of Gangrenous Dermold Cyst of the Ovary Necessitating Complete Resection and Suture of the Bowel; Recovery."
Dr. J. B. Blake: "Surgical Clinics in New York and Vienna."
Dr. J. S. Phelps: "Multilocular Cyst of the Ovary; Double

Ovariotomy: Recovery.
C. L. SCUDDER, M.D., Secretary, 1 Marlboro Street.

METEOROLOGICAL RECORD.

For the week ending December 15th, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:-

	Thermom- Relative eter. humidity.							ction rind.	Velocity We'th'r.				in inches.	
Date.	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 ₺. Ж.	8.00 P. M.	Daily mean.	R.00 A. M.	8.00 P. M.	H.00 A. M.	×.00 ₽. M.	×.00 ∆. ж.	8.00 P. M.	Rainfall in in
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*O., cloudy; C., clear; F., fair; G., fog; H., hasy; S., smoky; R., rain; T., threat ning; N., anow. † Indicates trace of rainfall ** Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, DECEMBER 15, 1894.

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Cleveland 325,000 -		325,000	123	35	15.39	10.53	3.24	8.91	3.24			
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	Amesbury .	10,920	; 4	. 0	25.00	25.00	_	25.00	_			

Deaths reported 2,353: under five years of age 778; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrheal diseases, whooping-cough, erysipelas and fevers) 333, acute lung diseases 352, consumption 289, diphtheria and croup

191, typhoid fever 43, diarrheal diseases 27, scarlet fever 27 cerebro-spinal meningitis 14, whooping-cough 13, erysipelas 7, maiarial fever 6, measles 5, smail-pox (Brooklyn) 1.

From scarlet fever New York 10, Boston 5, Providence, Lawrence, Brockton and Woburn 2 each, Brooklyn, Pittsburgh and Medford 1 each. From cerebro-spinal meningitis New York 6, Holyoke 3, Everett 2, Worcester, Lynn and Newburyport 1 each. From whooping-cough Philadelphia 3, New York, Brooklyn, Boston and Washington 2 each, Worcester and Lawrence 1 each. From erysipelas New York 3, Boston 2, Philadelphia and Pittsburgh 1 each. From measles New York, Philadelphia and Brookline 1 each. From measles New York 2, Brooklyn, Pittsburgh and Providence 1 each.

In the thirty-three greater towns of England and Wales with an estimated population of 10,458,442, for the week ending December 8th, the death-rate was 20.2. Deaths reported 4,057; acute diseases of the respiratory organs (London) 338, measles 155, diphtheria 95, whooping-cough 74, fever 55, diarrhea 46, scarlet fever 39, small-pox (Birmingham 3, Hull 1) 4.

The death-rate ranged from 14.6 in Burnley to 29.1 in Norwich; Birmingham 20.9, Bolton 19.8, Croydon 20.0, Hull 21.1, Leeds 22.3, Leicester 16.5, Liverpool 23.3, London 19.4, Manchester 22.9, Newcastle-on-Tyne 22.7, Nottingham 15.4, Portsmouth 20.4, Sheffield 21.9, Swansea 19.1, West Ham 19.1.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 15, 1894, TO DECEMBER 21, 1894.

CAPTAIN EDWARD R. MORRIS, assistant surgeon, on the arrival of CAPTAIN PAUL CLENDRNIN, assistant surgeon, at Fort Warren, Mass., will be relieved from duty at that post and will report for duty at Fort Spokane, Washington.

PROMOTIONS.

To be assistant surgeons with the rank of Captain, after five years' service, in conformity with Act of June 23, 1874:
FIRST-LIEUT. CHARLES WILLCOX, October 29, 1894.
FIRST-LIEUT. HARLAN E. MCVAY, October 29, 1894.
FIRST-LIEUT. EUCLID B. FRICK, October 29, 1894.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE FOR THE FIFTEEN DAYS ENDING DECEMBER 15, 1894.

STONER, G. W., surgeon. Granted leave of absence for twenty-two days. December 10, 1894.

ROSENAU, M. J., passed assistant surgeon. To report at Bureau for special temporary duty. December 10, 1894.

HARVARD MEDICAL SCHOOL. EVENING LECTURES.

The next lecture will be given on Thursday evening, January 3d, at 8 o'clock, by Prof. J. C. White. Subject, "The Cuffactions Features of Tuberculosis, Syphilis and Leprosy." Physicians are cordially invited.

APPOINTMENT.

DR. EDWIN W. DWIGHT has recently been appointed surgeon to out-patients at the Boston City Hospital.

BOOKS AND PAMPHLETS RECEIVED.

The Harvard University Catalogue, 1891-95. Cambridge.

Report of the Surgeon-General of the Army to the Secretary of War for the Fiscal Year Ending June 30, 1894. Washington. 1894

A Review of the Relations between the State and the Medical Profession in New York. By Frank Whitehill Hinkel, A.M., M.D. Reprint. 1894.

Yellow Fever the American Plague; Thorough Drainage and Municipal Cleanliness the Only Means of Insuring its Extinction. By J. C. LeHardy, M.D., Savannah, Ga. Reprint. 1894.

Some Remarks on the Address Delivered to the American Medico-Psychological Association, by S. Weir Mitchell, M.D., May 16, 1894. By Walter Channing, M.D. Reprint. 1894.

A Clinical Manual of Diseases of the Eye, Including a Sketch of its Anatomy. By D. B. St. John Roosa, M.D., LL.D., Professor of Diseases of the Eye and Ear in the New York Post-Graduate Medical School and Hospital; Surgeon to the Manhattan Eye and Ear Hospital, etc. Illustrated by 178 angravings and two chromo-lithographic plates. New York: William Wood & Co. 1894.

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